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transportation amounted to -Rp. 10,782,606,379 12 vehicles / 2 years, shuttle transportation of -Rp. 16,866,802,314 17 vehicles / 2years

Keywords : Tourism

Transportation, Shuttle Transportation, Vehicle Operating Costs, Financial Feasibility 1.

INTRODUCTION As a tourist destination, Bali consistently places the tourism sector as a mainstay sector and has a major impact on Bali's economic growth. Based on data from the Bali Province Central Statistics Agency (2020), 1 the number of foreign tourists who came directly to Bali continued to increase in 2015 amounting to 4,001,835 people, then in 2019 it increased to 6,275,210 people. The number of domestic tourists who came directly to Bali in 2015 was 7,147,100 people, then in 2019 it increased by 10,545,039. Based on the data, the number of travel agents continued to grow in 2015 as many as 368 businesses, then in 2019 increased to 416 businesses [1]. Meanwhile, the number of bus fleets has increased, in 2015 there were 7,532 vehicles, then in 2019 it increased to 9,142 vehicles. 1 Before the Covid-19 pandemic, the development of foreign tourists and domestic tourists greatly affected the income level of the community. So that people's incomes increase, the community's need for the tourism travel industry will increase. This fact immediately received a response from business people, especially private business actors in the p-ISSN : 1412-114X e-ISSN : 2580-5649

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Journal of Engineering Design and Technology 2 field of tourist travel transportation and travel agencies. In addition to tourists, residents need for tours and travel agencies such as conducting student study tours/students out of Bali and within Bali, praying (tirtayatra), and shuttle trips. By using the bus or minibus mode of transportation, travelers will be offered attractive packages at competitive prices. The number of businesses from tourist transportation that do not pay attention to cost items that affect 1 the financial feasibility of the business. So when a problem occurs, the entrepreneur cannot 2 make the necessary adjustments to survive in the business. Based on these conditions, investment 7 in the

form of bus transportation by business actors requires a large initial capital and of course needs to be carefully planned. Operational costs, fare pricing and unexpected costs are further considerations for travel entrepreneurs. To overcome the problem of **1 the financial feasibility of** the shuttle tourism transportation as a first step, it is necessary to have a study on **the financial feasibility of tourist transportation and shuttle transportation.** Previous research, analysis of **the Financial Feasibility of** Tourism Transport in the Province of Bali [10]. Judging from the aspect of travel needs, the tourism transportation travels to tourist objects in the province of Bali. In terms of costbenefit aspect, operating income is determined from different fares, based on local/archipelagic/international package names and bus types. Judging from the financial feasibility, the results **1 of the study are** said to be feasible, but sensitivity analysis is not calculated. Further research, regarding **the financial feasibility of** city tour transportation in Denpasar City [9]. Judging from the aspect of travel needs, the city tour transportation travels to tourist objects in Denpasar City. Judging from the cost benefit aspect, operating income is determined from trial and error rates. Judging from the financial feasibility, the study did not **4 calculate the Payback Period** (PBP). With the current study, the study carried out two different travel characteristics. In real conditions, tourist transportation has a non-fixed route, while shuttle transportation has a fixed route, in terms of benefits, tourism transportation business income uses different rates depending on the needs of each trip, while shuttle transportation uses relatively fixed rates. Financial feasibility calculated NPV, BCR, IRR, PBP, and sensitivity analysis. The research was conducted at the company PT. Penjor Bali Transport. The reason the research was conducted on these companies is because they have different travel characteristics, both tourist transportation services within Bali and outside Bali, and shuttle services.

2. METHODS

The research steps are carried out in stages including preliminary studies, identification of problems and setting research objectives, literature review, data collection includes primary and secondary data, calculation of income for tourist **1 transportation and shuttle transportation,** calculation of operational costs of tourist transportation vehicles and shuttle transportation, financial

feasibility analysis and sensitivity analysis. From the information and preliminary studies, problems can **3 be identified in the** travel agency business company. Furthermore, the objectives were set, namely to analyze vehicle operating costs [3], analyze the company's income, analyze the feasibility level of investing in the company, and analyze income losses **1 due to the Covid-19 pandemic** without the Covid-19 pandemic. Data collection starts from the Office of **5 PT. Penjor Bali Transport** and later on several other similar related agencies, to predict revenue and estimate the average demand growth per year. Primary data obtained from interviews with PT. Penjor Bali Transport, to obtain vehicle operating costs while secondary data obtained from the Bali Provincial Statistics Agency, **7 in the form of** inflation data for Denpasar City, data on basic loan interest rates obtained from the Financial Services Authority, as well as data on the number of shuttle passengers, data on the amount of income per year of transportation. tourism is obtained from **5 PT. Penjor Bali Transport**. In accordance with the objectives to be achieved, the tabulation of data is based on the classification of initial investment costs, fixed operating costs and variable operating **4 costs as well as** revenue generation. In this study, the feasibility analysis carried out is NPV, BCR, IRR and PBP, with a technical age of 15 years for tourist transportation and 10 years for shuttle transportation. Sensitivity analysis to changes in loan interest is carried out if the investment has been declared feasible. **2 The results of the** analysis are then concluded and suggestions are developed which are expected to improve the performance of the investment.

3. RESULTS AND DISCUSSION

Vehicle Operating Expenses

7 From the results of questionnaires and interviews conducted with the owner of PT. Penjor Bali Transport then obtained the operational costs of tourist transportation vehicles and shuttle transportation. Tourist transportation has a total fleet of 3 units (4550 seats) of the large type of Hino RK bus, a fleet of 4 units (35 seats) of the medium bus type Isuzu NQR, a fleet of 5 units (31 seats) of the medium bus type of the Mitsubishi Canter type. Shuttle transportation has a fleet of 17 units (13 seats) of the microbus type Isuzu ELF.

The operational costs of tourism transportation are grouped into several cost components, namely direct costs and indirect costs. Calculation of BOK + Margin 15% for large buses (capacity 4550 seats) is Rp. 514,080,836.00 per bus, medium bus (capacity 35 seats) Rp. 484,331,339.00 per bus, and medium bus (capacity 31 seats) of Rp. 459,963,190.00 per bus. Large buses (capacity 4550 seats) the average distance is 200 km/day, with the number of operations per month for 24 days, medium buses (capacity 35 seats and 31 seats) are 170 km/day, with the number of operations per month for 20 day. So that the distance traveled for 288 days (one year) for large bus vehicles (4550 seats capacity) of 3 units is 57,600 km, medium bus vehicles (35 seats capacity) of 4 units is 48,960 km, medium bus vehicles (31st capacity) seat) of 5 units is 48,960 km. **2** The results of the calculation of vehicle operating costs per kilometer, large buses are Rp. 9,000 per kilometer, medium bus (35 seats) vehicle operating costs per kilometer are Rp. 10,000, medium bus (31 seats) vehicle operating costs per kilometer of Rp. 9,500. The total total operating costs of tourist transport vehicles per year for 12 vehicles is Rp. 5,937,007,065, the projected income with an average inflation growth rate of 2.94% from 2022 - 2036, can be seen in Figure 1.

Figure 1. Operational Cost of Tourism Transport Vehicles Source: Analysis Results

(2021) Shuttle Transport The operational costs of shuttle transportation are grouped into several cost components, namely direct costs and indirect costs. Calculation of BOK + Margin 15% for microbus (capacity 13 seats) of Rp. 342.211.581.00 per bus. Microbus (13 seats capacity) the average mileage is 300 km/day, with the number of operations per month for 24 days, so that the distance traveled for 288 days (one year) for microbus vehicles (13 seats capacity) as many as 17 units is 86,400 km . The results of the calculation of vehicle operating costs per kilometer, microbus of Rp. 4,000 per kilometer. The total **1** total operational cost of shuttle transportation vehicles per year for 17 vehicles is Rp. 5,975,220,122, the projected income with an average inflation growth rate of 2.94% from 2022 - 2031, can be seen in Figure 2. Figure 2 . Operational Cost of Shuttle

Transport Vehicles Source: Analysis Results (2021)

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Journal of Engineering Design and Technology 4 Company Operating Income Tourism

Transport Based on the results of the interview questionnaires conducted, the income of PT. Penjor Bali Transport comes from tourist transportation in 2019 amounting to Rp. 6,896,800,000. The tourism transportation revenue projection is calculated using data on the average income growth rate, where 2019 is the base year data. From the calculation of income in 2019 as the base year, then income projections are carried out from 2022 to 2036. In 2020 and 2021 it is assumed that the economy has not returned to normal and in 2022 the economy will return to normal. This calculation does not use 2020 data, because the data is not significant for projecting income as a base year, and the income calculation 4 does not take into account the price per travel package or per person, so that the projected income calculation that will be issued until the technical age of the vehicle is total revenue. per year plus the value of income with an average percentage of income growth rate from 2014 to 2019 of 3.8% based on revenue data from PT. Penjor Bali Transport. 2 The results of the projected income from 2022 to 2036 can be seen in Figure 3. The total income from 2022 - 2036 is Rp. 1,562,035,827.201 Figure 3 . Tourism Transportation Business Income Source: Analysis Results (2021) Shuttle Transport Shuttle transportation has travel package rates including DenpasarLumajang PP Rp. 210,000, DenpasarBanyuwangi PP Rp. 180,000, DenpasarJember Rp. 190,000, DenpasarSurabaya PP Rp. 220,000, DenpasarMalang PP Rp. 220,000. The company does not have branches outside or within the province of Bali, but the home base for shuttle transportation is entrusted to each company agent in Lumajang, Banyuwangi, Jember, Surabaya, and Malang. Based on the results of interviews with 5 PT. Penjor Bali Transport, the price of travel packages increased by Rp. 10,000 for the past 2 years, so it is assumed that the price increase for travel packages is Rp. 10,000/2 years. Furthermore, the calculation of passenger projections is carried out, by finding the average passenger growth rate that

differs depending on each travel route from the data from 2014 to 2019. **2** The results of the annual passenger projection are multiplied by the travel package, so that the annual revenue for each route is obtained. Figure 4 shows the increase in income from 2022 to 2031, the total revenue from 2022 - 2031 is Rp. 148,324,344,698. Figure 4 . Shuttle Transportation Business Income Source: Analysis Results (2021)

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Journal of Engineering Design and Technology **5** Financial Feasibility Analysis Tourism

Transport The results of the financial feasibility analysis obtained NPV of Rp. Rp. 100,640,493,054 > 0, the BCR value is 1.95 > 1, the IRR is 42.478% > MARR 15%, and the PBP value for 7 years 1 month is smaller than the planned life of 15 years. It can be said that tourist transportation is financially feasible. Shuttle Transport **14** The results of the financial feasibility analysis obtained NPV of Rp. Rp. 734,194,558 > 0, BCR of 1.02 > 1, IRR of 19.649% > MARR of 15%, and the PBP value for 6 years 4 months is smaller than the planned life of 10 years. It can be said that the shuttle is financially

feasible. Sensitivity Analysis Sensitivity analysis on Tourism **1** and Shuttle Transportation

of PT. Penjor Bali Transport carried out a trial and error calculation of changes in income and costs, with three (3) sensitivity conditions carried out, namely: (1) With fixed income and increased costs. (2) With increased revenues and fixed costs. (3) With revenues and costs both increasing. Based on the calculation of the sensitivity analysis that has been carried out, **2** the results of the sensitivity analysis are as follows: The results of the

sensitivity of tourism transportation, with costs rising 101% and fixed income investment are not feasible. Likewise, with revenue down by 50% and fixed costs, income down by 34% and costs increasing by 34%, the investment is not worth it. **4** This is because the

value of NPV < 1, BCR < 0, and IRR < MARR. The results of the sensitivity of shuttle transportation, with costs increasing by 3% and fixed income investment are no longer feasible. Likewise, income decreased by 3% and fixed costs, **1** income decreased by

1.5% and costs increased up to 1.5%. The investment is not feasible. This is because the

value of NPV < 1, BCR < 0, and IRR < MARR. Business Income During the Covid19 Pandemic and Normal Conditions Tourism Transport From the secondary data, it was found that the income of PT. Penjor Bali Transport comes from tourist transportation in 2020 in the amount of Rp. 1,868,100,000 12 buses/year. The income is obtained from real conditions (the Covid19 pandemic), while income under normal conditions in 2020 is Rp. 7,158,878,400 12 buses/year, assuming normal conditions in 2020 using an average income growth rate of 3.8% from 2014 to 2019. Then, 1 tourism transportation revenue is projected with real conditions (the Covid 19 pandemic), compared to under normal conditions (without the Covid19 pandemic), calculated using data on the average income growth rate as the base year data. From the calculation of income in 2020, then revenue projections for 2021 are carried out. In 2022 the economy will return to normal. In the calculation, we look for the amount of loss from real conditions (Covid19 pandemic), compared to normal conditions (without Covid19 pandemic), obtained from the difference in income from real conditions (Covid19 pandemic), with normal conditions (without Covid19 pandemic). . Total income in real conditions (covid19 pandemic) is Rp. 3,807,187,800 12bus/2 years, the total income under normal conditions is Rp. 14,589,794,179 12bus/2 years. 2 The results of the losses experienced from tourism transportation revenues on real conditions (the Covid19 pandemic) had a major impact on the company's income, the losses totaled Rp. 10,782,606,379 12bus/2 years from 2020 to 2021 Shuttle Transport The Covid19 pandemic condition uses data 4 on the number of passengers based on secondary data obtained from PT. Penjor Bali Transport. Normal conditions assuming a different passenger growth rate for each travel route using the 2019 passenger base year is projected to 2020. The calculation of income for the Covid19 pandemic and normal conditions by multiplying the shuttle travel package rate, namely DenpasarLumajang PP Rp. 210,000, DenpasarBanyuwangi PP Rp. 180,000, Denpasar Jember Rp. 190,000, DenpasarSurabaya PP Rp. 220,000, DenpasarMalang PP Rp. 220,000. Furthermore, the total income from the year 20202021 due to the Covid19 pandemic was Rp. 1,577,966,300 17 transportations/2 years, and the normal condition is

Rp. 18,444,768,615 17 freight/2 years. Furthermore, if we look at the loss from the difference in income from real conditions and income from normal conditions of shuttle transportation, it is Rp. 16,866,802,314 17 freight/2 years

4. CONCLUSION

.Amount of Vehicle Operating Costs: Tourism Transportation, 3 types of large bus vehicles, capacity 45-50 seats, vehicle operating costs per bus per year + 15% margin of Rp. 514,080,836, the type of medium bus as many as 4 units of vehicles, a capacity of 35 seats vehicle operating costs per bus pe r

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Journal of Engineering Design and Technology 6 year + 15% margin of Rp. 484,331,339, and 5 medium-sized buses, 31 seats capacity, vehicle operating costs per bus per year + 15% margin of Rp. 459,963,190. So ¹ the total operational cost of tourist transportation vehicles is 12 units of vehicles per year , which is Rp. 5,937,007,065. Shuttle transportation, the type of microbus vehicle is 17 units of vehicles, a capacity of 13 seats, vehicle operating costs per bus per year + 15% margin of Rp. 342,211,581. So ¹ the total operational cost of shuttle transportation vehicles is 17 units of vehicles per year, which is Rp. 5,975,220,122 . Amount of operating income: Tourism Transportation, the amount of income during the technical life of the vehicle is 15 years at ⁵ PT. Penjor Bali Transport is Rp. 6,896,800,000. B y using projected income growth using the average income growth from 2014 to 2019 of 3.8%, then in 2022 to 2036 it is projected with a total income of Rp. 1,562,035,827.201. Shuttle Transportation, the amount of income during the technical life of the vehicle is 10 years at PT. Penjor Bali Transport is by projecting passenger growth using the average passenger growth from 2014 to 2019 for each travel route multiplied by the price of the shuttle travel package, and experiencing ¹ an increase in the price of tr avel packages every 2 years by Rp. 10,000. So in 2022 to 2036 passenger growth is projected and multiplied by the price of travel packages by the total revenue, which is Rp. 148,324434,698 . Financial Feasibility Analysis: Tourism Transportation, ¹ the financial feasibility of operating tourist transportation with an interest rate of 15% per year, using the

income growth rate, the following results are obtained: NPV value of Rp. 100,640,493,054 whose **6 value is greater than zero** (0), the BCR value of 1.95 is greater than 1, the IRR value of 42.478% is greater than the set MARR of 15% and the PBP value for 7 years 1 month is smaller than The design life is 15 years. So this investment is categorized as financially feasible. **2 The results of the** sensitivity analysis carried out by trial and error calculations are sought what is the maximum percentage of sensitivity to the conditions of expenses and income costs, where the investment is not worth it. **The results of the** calculation show that the cost of expenses increased by 101% and fixed income costs, fixed expenses and income costs decreased by 50%, expenses increased by 34% and income costs decreased by 34%. Shuttle Transportation, **1 the financial feasibility of** operating **tourist transportation with an** interest rate of 15% per year, using the income growth rate, the following results are obtained: **NPV value of Rp. 734,194,558** whose **6 value is greater than zero** (0), BCR value of 1.02 which **value is greater than** 1, IRR value of 19.649% greater than the set MARR of 15% and PBP value of 6 years 4 months less than The design life is 10 years. So this investment is categorized as financially feasible. **2 The results of the** sensitivity analysis carried out by trial and error calculations are sought what is the maximum percentage of sensitivity to the condition of expenses and income costs, where the investment is not worth it. **The results of the** calculation show that expenses increased by 3% and fixed income costs, fixed expenses and income costs decreased by 3%, expenses increased by 1.5% and income costs decreased by 1.5%. The amount of loss of operating income in real conditions (covid-19 pandemic) and normal conditions: Tourism Transportation, total income in real conditions (covid-19 pandemic) is Rp. 3,807,187,800 12bus/2 years, the total income under normal conditions is Rp. 14,589,794,179 12bus/2 years. Meanwhile, the loss from **1 tourism transportation revenue is** -Rp. 10,782,606,379 12bus/2 years from 2020 to 2021. Shuttle Transportation, total income in real conditions (covid -19 pandemic) is Rp. 1,577,966,300 17 transportations/2 years, the total income under normal conditions is Rp. 18,444,768,615 17 freight/2 years. Meanwhile, the loss from tourism transportation revenue is -Rp.

16,866,802,314 17 transportations/2 years from 2020 to 2021.

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