

Development of Access and Transportation Services to Raden Inten II Airport in Lampung

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ABSTRACT

Airport is a transportation mode that plays an important role in the smooth movement of both passengers and goods. Regarding the important function of an airport, it is necessary to pay attention to its accessibility, both within the airport environment, as well as smooth access to and from the airport area. The purpose of this discussion is to try to analyze the aspects that affect the smooth access to and from the airport, where the review is Raden Inten II Airport, Lampung. The Parking Index with a capacity of 640 squares was 0.4. From the value of PTO, per plot in one day contained 3 vehicles. Vehicles that used the parking lot for 0-14 hours and as many as 3,321 vehicles and of this number 63% park less than one hour. there was a problem in the drop zone area, from observations for 30 minutes the average lane reaches 60-125 vehicles so that it caused queues and problems. After 7 years from now, it is necessary to think about a parking policy in the form of progressive parking rates or to encourage people to use public transportation in the form of buses. The low performance of bus such as load factor, operating hours and bus operational services need of improvement and travel demand management support by government's regulation.

Kata kunci: Bus Performance, Access, Capacity, Regulation, Improvement.

1 INTRODUCTION

1.1 Background

Airport is a transportation mode that plays an important role in the smooth movement of both passengers and goods. (Restiana, 2012). Regarding the important function of an airport, it is necessary to pay attention to its accessibility, both within the airport environment, as well as smooth access to and from the airport area. Often the journey by air is smooth, when the passenger is sitting on the plane until the plane lands at its final destination, but when exiting or entering the airport experiences delays that can extend travel time. Factors that affect the smoothness of travel using this mode of air transportation, apart from processes from the air side and land side, are no less important is the smooth access to and from the airport. The purpose of this discussion is to try to analyze the aspects that affect the smooth access to and from the airport, where the review is Raden Inten II Airport, Lampung.

2 RADEN INTEN II AIRPORT

2.1 Characteristics of Raden Inten II Airport

The Regional Government of Lampung Province plans to maximize airport potential by developing Radin Inten II Airport that can accommodate the need for access to and from within the domestic and international scale (Saprilantu, 2016). Radin Inten II Airport in Lampung Province is a public airport organized by the Technical Implementation Unit (UPT) of the Directorate General of Civil Aviation, Ministry of Transportation. In 2016 the airport terminal was upgraded to three floors so that it could accommodate more than 3 million passengers per year and the parking lot in the area was getting wider and able to accommodate more vehicles. With a 4-story parking building so that it could accommodate 1000 vehicles. In addition, the runway was extended to 3,200 meters from the previous 2,500 meters (Setiawan, 2019).

In 2016 the number of passengers at Radin Inten II Airport was 1.9 million after Radin Inten II Airport renovated the air and land side to 2.4 million passengers in 2017. Radin Inten II Airport was managed by the Ministry of Transportation and would soon change hands to Angkasapura. . When fully operational in 2017, the number of passengers able to be served reached 6,000 per day (Dishub Prov Lampung, 2017). The apron could accommodate 10 aircraft with 50 aircraft movements per day. The number of movements was not much different from the Sultan Mahmud Badaruddin II International Airport in Palembang, which reaches 60 movements per day.

In completing the facilities to become an international airport, Radin Inten II International Airport has several land transportations, namely; taxis, online taxis, online motorcycle taxis, Bus Rapid Transit (BRT) and trains (in the

planning process). Service rates using online taxis and motorbike taxis were relatively expensive, so the development of the Trans Lampung bus public transport could play a more important role among the alternative modes of transportation at Radin Inten II Airport.

On December 18, 2018 Raden Inten II Airport was designated as an international airport in the Decree of the Minister of Transportation of the Republic of Indonesia Number KP 2044 of 2018 (Baraas, 2015). The government was building infrastructure and supporting facilities at Raden Inten II Airport to improve services at the airport..

2.2 Accessibility

Accessibility is the ease with which a place can be reached, which is measured by distance, time and cost. There are two accesses in the form of a link, namely the highway from the city center of Bandar Lampung and the Railway. With Trans Sumatra Toll Road, there is a toll gate near the airport which provides access to Bandar Lampung City area as well as to the airport in the South Lampung Regency area from Bakauheni. The airport train development plan is to take advantage of the current access, namely Tarahan Railway to Prabumulih, South Sumatra, through rejosari station located near the airport.



Figure 1 Access to Raden Inten II Airport

Apart from the accessibility mentioned above, this airport could be reached by people in other districts such as Pringsewu, Tanggamus, Pesawaran and other areas via western Sumatra highway, through the city of Bandar Lampung. Meanwhile, other areas include Metro, East Lampung, Central Lampung, Mesuji, Tulang Bawang and North Lampung via Trans Sumatra Central Sumatra Road or the Trans Sumatra Toll Road. The mode of transportation used was usually public transportation in the form of buses or public transportation and private vehicles. With the existence of online transportation, both four-wheeled and two-wheeled, increases the choice of people to this airport.

Especially for movements from the city of Bandar Lampung to the airport and vice versa, it is served by airport buses managed by PT Lampung Jasa Utama (LJU), conventional taxis, public transportation, buses, and online transportation.

3 METHODS

Due to the significant passenger movement growth over years in the Radin Inten II Airport, the level of comfort in the airport terminal is perceived to be decline. Therefore, there is a need to evaluate the performance of the airport terminal facilities in order to keep or even improve the passenger services (Yarlina, L, 2016). In this research, several aspects were reviewed such as parking conditions at the airport and the circulation of vehicles in and out of the airport, airport bus operational patterns and plans for developing trains to the airport.

In addition to observation and parking calculations in the airport area as well as interviews, surveyors were on the bus during the trip from Bandar Lampung - Raden Inten II and vice versa to record the number of passengers per trip in one full day. To find out the amount of vehicle operating costs, interviews were conducted with Trans Lampung, both employees and bus crew.

4 DATA PRESENTATION AND ANALYSIS

4.1 Parking Area

Radin Inten II Airport has a 4-story parking building built in 2016 by PT.PP and managed by PT.HMA, and provided special parking facilities for women and disabled people. With a parking area of 22,500 m² this parking building could accommodate \pm 700 cars (Radin Inten II Airport, 2017).

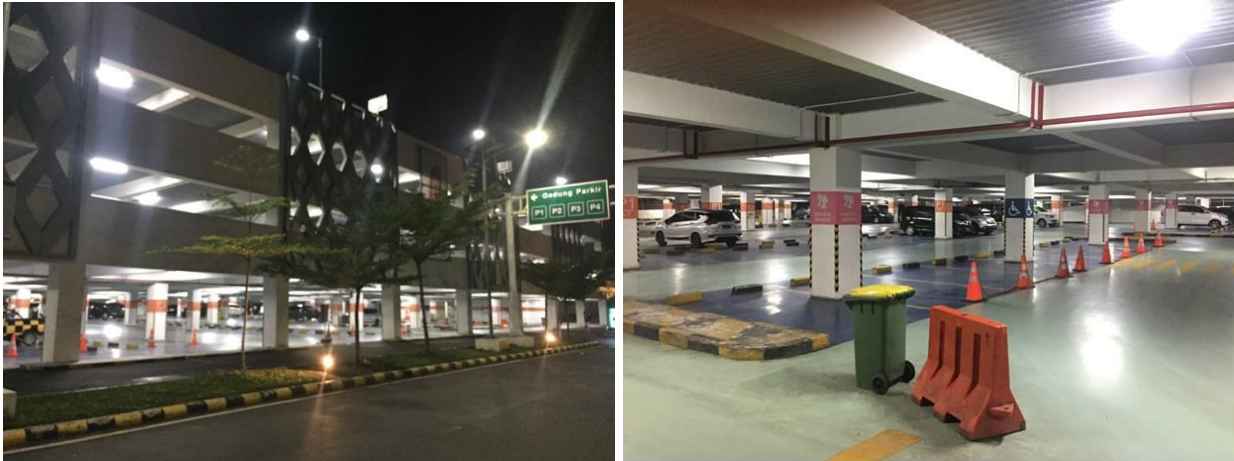


Figure 2 Parking Area in the Airport Parking Building

The mode of transportation other than private vehicles was a conventional taxi which was given a parking area on the 1st floor, while Trans Lampung Airport Bus has a parking area in front, before the drop zone area for private vehicles and taxis, both conventional and online transportation. Online transportation vehicles were not allowed to enter the airport area for parking so they wait outside the airport and only enter the drop zone area when dropping off passengers. The problem that was often seen in this airport area was congestion at peak times or the departure and arrival of planes which were almost simultaneously. The drop zone area consisted of three lanes and could contain a maximum of 8 vehicles per lane.

With a parking area of 22,500 meters Radin Inten II Airport has 785 parking lots. In the PTO calculation, the number of parking lots used was 640, this value was obtained based on the total number of plots minus the number of vehicles that have parked for more than 5 hours. The highest accumulation of car parked vehicles was 241 vehicles, so that the Parking Index with a capacity of 640 squares was 0.4. From the value of PTO, per plot in one day contained 3 vehicles. Vehicles that used the parking lot for 0-14 hours and as many as 3,321 vehicles and of this number 63% park less than one hour. From the calculation, the number of vehicles that could be accommodated during a certain period was 10,124 vehicles / day.

4.2 Drop Zone's Problems

Based on the questionnaire given to airport users, it was found that 45% used public transportation vehicles, the rest used private vehicles with 19% only dropped by car. This figure explained why the vehicle accumulation value was low and the parking index value was still satisfactory, so that parking space was still sufficient. As much as 60% of the people did not use the parking facility because they only dropped by car.

Related to this, there was a problem in the drop zone area, from observations for 30 minutes the average lane reaches 60-125 vehicles so that it caused queues and problems. In the drop zone area there were actually officers and police guarding to avoid vehicles that have stopped for too long due to waiting for the arrival of passengers. However, it was still not very effective because there were still many people who park in the area if the officers were careless or not there. Currently, it is not possible to make a new design and expand the drop zone area to avoid congestion caused by these obstacles due to limited land. In the next development, with the government's plan to expand airport access towards the land near the toll area so that the entrance is changed to the rear area of the airport after the runway or runway expansion, this problem will be resolved. The capacity of the parking building will be able to accommodate

the growth of parking vehicles until 2027. After 7 years from now, it is necessary to think about a parking policy in the form of progressive parking rates or to encourage people to use public transportation in the form of buses.

4.3 Airport Bus Operational Characteristics

The capacity of the Trans Lampung Bus for Bandar Lampung - Raden Inten II Airport route uses a medium-sized bus with a seating capacity of 20 passengers plus a standing passenger capacity of 15 passengers, so the number of passengers calculated is 35 people. The length of the route from Bandar Lampung to Raden Inten II Airport is 31.4 km, while the length of the route from Bandar Lampung is 32.3 km. The length of the route is different because the bus lines on the route leave and return through different routes.

The Trans Lampung bus operating hours, namely on the morning bus schedule with 4 buses operating from 04.30 to 12.00 and each bus traveling 1.5 rites. Whereas on the schedule 4 afternoon buses which operate from 13.00 until the last flight schedule with each bus having a trip of 2.5 rites to the last plane by adjusting the bus operating schedule.

The Trans Lampung bus on the departing route (Bandar Lampung - Raden Inten II Airport) starts operations at 04.30 in the morning to 17.00 according to the flight schedule, while on the return route (Airport - Bandar Lampung) the Trans Lampung Bus operates until the arrival of the last plane. On the Trans Lampung bus operating schedule from 04.30 - 07.00 the time of arrival at Raden Inten II airport is still sufficient for aircraft flight schedules, but at 09.00 - 12.00 the bus operation schedule exceeds the flight schedule time so passengers must take the bus departure schedule earlier. From the data above, users of the Trans Lampung Bus (TLB) Route Bandar Lampung - Raden Inten II Airport can estimate the travel time that will be taken by the flight departure schedule.

TLB services on Bandar Lampung - Raden Inten II Airport can get by ordering tickets through the main counter. The travel speed of each bus averages 29-31 km / hour. The frequency per day for each bus was 2.5 trips and with the travel distance that could be taken by each bus of 30 km-traveled / trip, the total trip per bus was 75 km-traveled / day. The load factor for bus passengers was only 11.4% with 10 passengers / day / bus / trip on (weekdays) and 10 passengers / day / bus / trip on (weekends).

Table 1. Recapitulation of basic costs with the existing *load factor* 11.4285%

No.	Cost component	Rp/bus-km	Rp/passenger-km	%
A.	Direct cost	4,305.6887	122.9072	75.2300
1.	Bus crew salaries and allowances	1,880	53.6652	32.8561
2.	fuel oil	1,716.6667	49.0028	30.0016
3.	Tire	450	12.8454	7.8645
3.	Small Service	36.7518	1.0491	0.6423
4.	Big Service	28.9370	0.8261	0.5058
5.	Terminal levies	133.3333	3.8068	2.3308
6.	Vehicle tax	55.5555	1.5862	0.9712
7.	KIR	4.4444	0.1269	0.0777
B	Indirect Costs	1,037.0370	29.6296	18.1340
C	Basic costs (A+B)	5,718.7257	163.3921	100

After calculating and analyzing, the tariff was obtained based on the BOK on the Trans Lampung bus route of Bandar Lampung - Raden Inten II Airport with an existing load factor of 11.4285% of Rp. 40071.4445 / passenger. Meanwhile, the rates imposed by PT. Trans Lampung for Rp. 25,000, -. Of course, there was a difference of Rp. 15317,5031, - between the prevailing rates and calculations based on BOK. This must be followed up by the management of PT. Trans Lampung and the government.

Based on BOK calculations, the cost difference could be resolved by increasing the existing load factor to 18.5%. This meant that the increase in Trans Lampung bus passengers must increase by 7.0715% on the Bandar Lampung - Raden Inten II airport route. To increase the existing load factor to 18.5%, there needs to be intervention from the government and the trans bus manager itself. As many as 64% of respondents tended to use the Trans Lampung Bus service and the following are the opinions and suggestions of respondents why the Load Factor value is low.

Table 2. Time observation data arrived at T4 at the control point

No	Time	Headway(minutes)
1	05.30	
2	06.00	44
3	07.00	41
4	09.00	111
5	10.00	59
6	11.00	59
7	12.00	59
8	13.00	56
9	14.00	64
10	15.00	51
11	16.00	59
12	17.00	58
rata-rata		60.1

The TLB schedule operated every hour on the departing route with the right departure schedule, so passengers could estimate the time if they wanted to use the TLB service. From the results of the Headway table, the average value of the calculation was 60.1 minutes. The value of Time Headway on the Bandar Lampung - Raden Inten II Airport route adjusted to the flight departure schedule.

The factors that cause a small load factor value are also due to the following;

a) Lack of bus stop

Lack of bus stops along the TLB Bandar Lampung-Airport route so passengers were too far to walk to the bus stop to wait for TLB. In addition, passengers could not wait comfortably when waiting on the side of the road because there were no stops available.

b) Punctuality

The timeliness has been scheduled for the TLB operation for the Bandar Lampung - Airport route. However, during peak hours, bus speeds were low because there were no special bus lanes. So that the timing was felt to be the reason passengers prefer other modes of transportation as a mode of transportation to the airport.

c) Lack of socialization and publication of TLB

Good socialization and publication were very important so that the public was aware of the TLB services that have been provided. Few people know about TLB services at low prices and convenient facilities. In addition, TLB also serves passengers who have previously ordered TLB via WhatsApp or contacted the Customer Service number provided.

d) Mode Shift

Mode shift, namely the transition of passengers to move from one place to another. The TLB service for the airport route - Bandar Lampung only serves inter-provincial routes and there was no TLB for city transportation, so passengers had to end their trip before arriving at their real destination.

e) Area Coverage

Area Coverage was to measure whether a route was good in its ability to serve the service area. If the TLB service could be covered properly, it could make it easier for passengers who came from far from the Trans Lampung Bus route.

Promotion and service improvement must be improved by the manager, namely PT. Trans Lampung to increase the load factor of existing bus passengers. An example of improving services is creating a time schedule and attaching it to the airport stops. The goal is for consumers to know about the departure of each bus stop itself so that consumers

can predict which stop they will board from. The role of the government is expected to be able to make facilities, namely airport bus caps specifically intended for airport bus passengers. The goal is for consumers to have a safe and comfortable place to stop before boarding the airport bus. Determination of the location of the stop can be at busy points that the Trans Lampung bus passes from Bandar Lampung - Raden Inten II.

5 CONCLUSION

Transportation services such as parking area in Raden Inten II Airport on existing condition is good enough but not for public services such as Airport Bus namely Bus Trans Lampung (BTL). Beside parking area of BTL not include at parking building, the location and capacity need to improved. To increase the existing load factor to 18.5%, there needs to be intervention from the government and the trans bus manager itself. If the bus service could be covered properly, it could make it easier for passengers who came from far from the Trans Lampung Bus route. The improvement of bus stop number, publication and socialization, other kind of transportation mode such as feeder and regulation of government to support public transport implementation.

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