

Analyzing The Customers' Ability to Pay And Willingness To Pay For Soekarno Hatta Airport Railway Services (From Bni City Station)

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Abstract

One alternative mode provided by PT. Railink to get to Soekarno Hatta Airport is an airport railway, which was inaugurated in January 2018. The fare that is valid for one trip from Sudirman Baru Station (BNI City Station) is Rp. 70,000 / passenger. Yet, there are problems in Ability to Pay (ATP) and Willingness to Pay (WTP). Therefore, this study discusses the users' Ability to Pay and Willingness to Pay towards the Airport Railway Service in order to seek for the ideal fare recommendations of the Soekarno Hatta Airport Railway. The data were collected through questionnaires and direct interviews with airport train service users and PT. Railink. The data were processed using the household budget method stating preference that results on an average ability to pay respondents (ATP) of Rp. 116,033 and the willingness to pay (WTP) of Rp. 52,560. To get the ideal fare recommendation, The result is calculated to get the average sums between the average ATP and the average WTP. The result of the ideal fare recommendation is IDR 84,297. By using the ideal fare there are 70% of respondents who are able to pay according to the ideal fare. Based on the results of the questionnaire, an ideal fare is recommended after an increase in the quality of priority or improvement of services provided by the operator. At last, the ideal fare recommendation after an increase is Rp. 91,947

Keywords :

Ability to Pay (ATP); Willingness to Pay (WTP); Ideal Fare, Airport Railway

Introduction

Transportation is urgently needed to support life today as well as the economy, either for individuals or wider coverage such as countries. A country can be said as a developed country if the transportation modes are integrated to one another. Along with the development in other aspects, the transportation modes become an aid to assist movements from one point to another point with the help of advanced technology.

Transportation comes from the Latin word "transportare", trans means opposite or next to another and portare means to transport or carry. So, transportation means taking or carrying (something) from one side or somewhere to another place. According to the

technical point of view and the means of transportation there is rail transportation, such as train transportation, electric trams, and so on. Road and rail handling is sometimes combined in groups called rail and road transportation or land transportation.

Indonesian government as stated in *Undang – undang No. 23 tahun 2007 about Railway* explain that, “The train is a railway facility with movement power, either walking alone or coupled with other railroad facilities, which will or are moving on the railroad associated with train travel. The train station is where trains depart or stop to serve up and down passengers; loading and unloading of goods and / or railroad operations.”

Soekarno-Hatta International Airport was established in 1985 and it has been in a lot of changes in the facilities as well as the infrastructures not only in the area of the airport but also the outside or outerpart of the airport. On December 26, 2017, PT Railink which is a subsidiary of PT. Angkasa Pura II (PT. AP II) and PT. Kereta Api Indonesia (PT. KAI) established the latest idea in Java, that is airport railway station starting from BNI City Station (Sudirman Baru) unto Soekarno-Hatta International Airport Station. Although this is not the first airport railway running, PT. Railink will try to provide a much better service.

Airport Railway was built because of the demand of the citizens of Jakarta for the betterment of air transport services. Toll road and arterial road leading to Soekarno-Hatta International Airport are very crowded and affect to congestion. Therefore, citizens need alternative access to Soekarno-Hatta International Airport. The best solution to that problem is relying on the services of the Airport Railway .,

Airport railway serves 80 trips per day with headway about 15-20 minutes. With the distance of 36,4 kilometers (km), it takes about 55 minutes to arrive at the airport. This airport railway passes through five stations, they are Bekasi Station, Manggarai Station, BNI City Station, Duri Station, Batu Ceper Station and Soekarno-Hatta International Airport Station. Specifically, Bekasi Station, BNI City Station and Batu Ceper Station are used as the shuttle for passengers.

Airport railway provides more alternative transportation along with other modes of transport which already exist, they are DAMRI buses, conventional taxi, online taxi,

and private vehicles. The chosen modes of transportation are generally influenced by the distance, travel time, and price. However, the railroad becomes the favourite one because of the following two reasons(Mahalli, 2013):

1. Free from traffic congestion. Travel time will be shorter and cost of transportation would be cheaper by train, especially for long-distance travel.
2. Suitable transportation in all weather conditions. The train is not blocked by bad weather due to the rain and storms

Here is the comparison of the train with other modes of transportation. The tariff of DAMRI buses from Thamrin City Mall to the airport is Rp. 43,500 with approximately 90 minutes travel time. Conventional taxi takes about 60 upto 90 minutes with the average fare of one way trip around Rp 120,000. For online taxi, it costs about Rp 100,000 / 1-4 passengers with 60 - 90 minutes travel time. The airport railway, on the other hand, costs Rp 70.000 / passenger with approximately 30 minutes travel time.

The airport railway users mostly feel that the fare charged is quite expensive. Therefore, it is necessary to know the primary reason why Soekarno-Hatta International Airport Railway fare is set by PT. Railink at a price of Rp. 70,000 / passenger. Thus, the researchers analyze the train service users' ability and willingness to pay as well as find out the ideal prices that should apply.

Ability To Pay (ATP) is the ability of a person to pay for services received based on the income that is considered ideal. The approach used in ATP analysis is based on the allocation of costs for transportation and the income it receives. In other words, the ability to pay is the ability of the community to pay for the cost of the journey they do. Some factors that influence the ability to pay include (Tamin, Rahman, Kusumawati, Munandar, & Setiadji, 1999):

1. the amount of income
2. transportation
3. total transportation costs
4. intensity of travel
5. total expenditure per month

6. types of activities
7. percentage of income used for transportation costs.

While Willingness To Pay (WTP) is the willingness of users to issue rewards for the services they obtain. The approach used in the willingness to pay analysis is based on the user's perception of the tariff of the public transport service. In terms of transportation WTP is influenced by several factors, including (Al-Ghuraiz & Enshassi, 2005):

1. production of transportation services provided by employers
2. the quality and quantity of services provided by employers
3. the utility of users towards public transport
4. user income.

The steps taken to get a WTP are as follows : (Mahalli, 2013; Tamin et al., 1999)

1. Calculate the journey of each respondent (km / day / individual).
That is by measuring the distance from the origin to the destination of the movement
2. The amount of expenditure for travel done by respondents is based on the amount of transportation expenses the respondents fill out in the questionnaire (Rp / day / individual),
3. Calculate the WTP, by dividing the amount of expenditure by the length of the trip (Rp / Km).

Method

This research was based on descriptive research. This descriptive research was useful to describe the ability and willingness to pay of the public towards the use of the Soekarno-Hatta International Airport Railway services.

This research was conducted at the BNI City Station, Batu Ceper Station and Soekarno-Hatta International Airport Station, with the following reasons:

1. The BNI City Station and Batu Ceper Station are the train service station from/to Soekarno-Hatta Airport.

2. Airport railink service is an airport train service provided by the government as the main route that directly goes to Soekarno-Hatta International Airport.
3. There is no research on the Soekarno-Hatta International Airport Railway services users' ability and willingness to pay .

Population was defined as an area of generalization consisting of objects / subjects that had certain qualities and characteristics set by researchers to be studied and then the conclusion was drawn (Amin, 2011). This population of the research was the users of the Soekarno-Hatta International Airport Railway service from BNI City Station.

The sample was part of the population that was expected to represent the research. The sampling method of this research used Purposive Sampling method, which was to "concentrate on people with particular characteristics who will better be able to assist with the relevant research" (Etikan, 2016). The sample in this research was as many as 50-75 respondents with the following condition:

1. Respondents are Soekarno-Hatta airport train services users from BNI City Station to Batu Ceper Station and Soekarno-Hatta Airport Station
2. Respondents are above 20 years old

Primary data collection method was carried out through questionnaires. If the respondents encountered difficulties in filling out the questionnaire, the researcher could help them by conducting interviews based on the questionnaire. Interviews were useful to avoid inappropriate response towards the questions due to lack of understanding and to cater with the respondents' reluctance to confirm the questions. In addition, interviews were also conducted with officers and authorities of the Soekarno-Hatta airport train services.

This research used household budget method and stated preference method. The household budget method was used to measure users' level of ability to pay for the airport rail service and the stated preference method was to measure users' level of willingness to pay for the airport train service. Then the data was processed using an

Excel program so that the ideal tariff recommendation could be adjusted with the users' ATP and WTP value toward the Soekarno-Hatta airport train service.

ATP =	$\frac{Lr \cdot Pp \cdot Pt}{Tr}$
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Figure 1. Household budget used to get the value of ATP.
Source : (Susanto, Anwar, & Wicaksono, 2015)

Information

- ATP : Purchasing power of respondents (Rp / kilometers),
 Lr : Respondent's income level per month (Rp / month),
 Pp : Percentage of budget for transportation per month out of total income,
 Pt : Percentage of allocation of transport costs used for city transportation,
 Tr : Total length of travel of respondents per month (Km / month).

The stated Preference method was used to measure the willingness to pay of the respondents by asking whether the respondents were willing to pay by giving response assessed through ranking, rating or choice (Yuniar, P, Wicaksono, & Rahayu, 2014). The WTP value of each respondent was in a form of the maximum amount of money that the respondents were willing to pay for the airport train services, which can be seen as follow:

WTP type of work =	Σ (selected fare X number of respondents)
	Number of respondents for each type of work
WTP for all occupational categories =	Σ (WTP type of work)
	Number of job categories

Figure 2. The WTP value is obtained by averaging the perception of the rates selected for each type of work.

Source : (Zulfikar, 2015)

Result and Discussion

Based on the result of the data collection of the questionnaire, the monthly average of the respondents' personal income is Rp 7,723,520. The majority of

respondents' income range is between Rp 1,500,000 - Rp 10,000,000 which is 70% (35 people). The average allocation of the respondents' personal income for transportation is 20.52% of personal income. The average allocation for airport train costs per month is 33.26% of the allocation of personal income for transportation. The average frequency of trips is 1-2 times per month constituting 86% of respondents (43 people).

Range of income	Number of Respondents
< Rp 1.500.000	3
Rp 1.500.000 - Rp 5.000.000	23
Rp 5.000.001 - Rp 10.000.000	12
Rp 10.000.001 - Rp 15.000.000	5
> Rp 15.000.000	7

Figure 3. *The average respondent's personal income monthly*

Airport Railink Service is provided by the Government as an alternative mode of transportation to get to the airport. In organizing the airport train service, they involved two State-owned enterprises (SOEs) engaged in the field of railways and airports namely PT. Kereta Api Indonesia (PT. KAI) and PT Angkasa Pura II (PT. AP II). Cooperation between the two STATE-OWNED ENTERPRISES was formed due to the joint venture and the private status. Without becoming the subsidiary, PT. Railink has already had STATE-OWNED status.

The share of this enterprise 40% belongs to PT Angkasa Pura II (PT. AP II) and 60% belongs to PT. Kereta Api Indonesia (PT. KAI). The profits will be divided into three parties namely PT. AP II, PT. KAI, and PT Railink. PT. KAI provides the trains, rail line, and stations outside the airport, PT AP II provides the land, and the station at Soekarno-Hatta Airport, while PT Railink provides airport rail. PT Railink calculated the fee based on the considerations of the operational costs, the occupancy target per month, and the quality of service provided.

PT Railink charges Rp 70,000/passengers in Soekarno-Hatta Airport Railway based on the surveys they did internally i.e. on the operational costs and occupancy target per month. The occupancy targetted each day reaches 40%, but the existing conditions reaches only 20% of occupancy because of the interrupted access station of

BNI City due to development, congestion and the odd-even regulation. Despite this condition, PT Railink remains optimistic because the number of passengers per day even every month keeps increasing. It is also because this is the only route to Soekarno-Hatta Airport from Jakarta and surrounding.

To increase people's interest in using public transportation in this particular airport railway, therefore PT Railink applies a special price. By relying on the fare of Rp. 70,000/passengers from BNI City Station to Soekarno Hatta Station, PT Railink actually does not get a large amount of revenue. Therefore PT Railink takes benefits from non business passengers such as lease tenant and rent ads (in station area as well as at the railway).

Months	SDB – BPR	SDB - BST	Passengers
January 2018	1037	19643	20680
February 2018	1056	13817	14873
March 2018	2038	19433	21471
April 2018	4889	24627	29516
May 2018	6259	23140	29399
June 2018	4009	19848	23857
July 2018	7654	23281	30935

Figure 4. Total passengers occupancy from January-July
Source : PT. Railink

Months	SDB – BPR	SDB – BST	Passengers
January 2018	33	634	667
February 2018	38	493	531
March 2018	66	627	693
April 2018	163	821	984
May 2018	202	746	948
June 2018	134	662	796
July 2018	239	728	967

Figure 5. Average passengers occupancy from January-July
Source : PT. Railink

The purpose of each respondent's use of the airport train is varied, including 6% (3 people) for business purposes, 22% (11 people) for business purposes, 64% (32 people) for vacation, and 8% (4 people) for having different travel destinations such as trying and returning to hometown.

The respondents' average desire to pay is Rp. 52,560. In addition, 70% of all respondents are willing to pay more if there is increased priority or improved services. The respondents' average willingness to pay after an increase in priority, quality, or service is Rp. 67,860 and the average additional amount for the increase in service priority is Rp. 15,300.

Each respondent who has been interviewed or has filled out the questionnaire has the right to satisfy his own desires. From the results of the survey, the priorities can be classified into,

1. Accuracy of airport train departure and arrival times,
2. Easy and fast ticket purchasing ,
3. Airport train safety and security.

Out of 50 respondents, the majority users of airport train service is 64% (32 people) at the age of 19-25, while the rest is divided into several groups: 26-32 years of age (22% or 11 people), aged 32-38 years (2% or one person), aged 39-45 years (4% or two people), aged 46-52 years (2% or one person), and aged above 52 years (6% or three people).

The total number of respondents based on the gender is 62% of men (31 people) and 38% of women (19 people). Furthermore, the marital status of the respondents constitutes 26% married (13 people) and 74% unmarried (37 people).

The respondents who are married may have at least one dependent. The number of respondents who have no dependent is 54% (27 people) while that of with one dependent equals to 14% (7 people). There are 14% (7 people) respondents with two dependents, 6% (3 people) with three dependents, and 12% (6 people) with more than three dependents.

Experience in using airport trains is quite diverse. The number of respondents who have used airport trains more than three times is as many as 13 people (26%), exactly three times is as many as four people (8%), twice is as many as nine people (18%), and one time is as many as 24 people (48%). From the experience of the respondents in using the airport trains, each respondent has a variety of reasons, namely, as many as 50% (20 people) respondents prefer to use airport trains because

they save more time. 20% (10 people) go for the convenience, 4% for security (two people), 24% (12 people) do it as a trial and 2% (one person) does it to reduce street pollution.

Because airport railway is still considered new in Jakarta, respondents have already tried the alternative transportation options such as conventional taxis, online taxi, DAMRI buses, and private vehicles to get to the airport. Respondents who use conventional taxi is as many as 8% (four people), online taxi is as much as 34% (17 people), DAMRI bus is 40% (20 people) and private vehicles is 16% (eight person).

The most dominant respondents (22 people or 44%) come from Jakarta because the location of the BNI City Station is in Jakarta, nine people (18%) are from Tangerang, five people (10%) are from Bekasi, three people (6%) come from Depok, three people (6%) are from Bogor, and eight people (16%) are from outside JABODETABEK such as Bandung, NTT, Palembang, and Padang.

1. Ability to Pay

The respondents' ability to pay was obtained by using the household budget method by comparing the allocation of transportation costs for the use of airport trains with the frequency of travel using airport trains every month. The results of the calculation of the survey for the ability to pay from each respondent along with the percentage of the household budget can be seen in the following table:

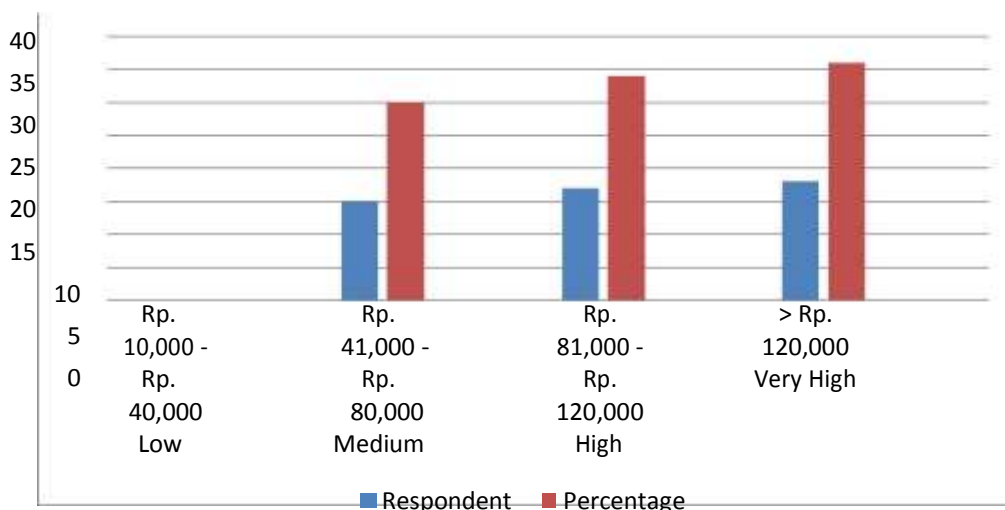


Figure 6. Respondent's ATP score

Source : data process by the authors

We can see that the respondents who have the ability to pay in very high category ($> \text{Rp. } 120,000$) is as many as 36% (18 people), in high category ($\text{Rp. } 81,000 - \text{Rp. } 120,000$) is as many as 34% (17 people), and in medium category ($\text{Rp. } 41,000 - \text{Rp. } 80,000$) is as many as 30% (15 people). The average respondents' ability to pay is $\text{Rp. } 116,033$. The respondents' minimum ability to pay is $\text{Rp. } 60,000$, while the maximum one is $\text{Rp. } 250,000$. and the median value of the respondents' ability to pay is $\text{Rp. } 100,000$.

2. Willingness to Pay

By using the stated preference method, the respondents stated the amount that they are willing to pay. The respondents' desire to pay is grouped into several categories which can be seen in the table below:

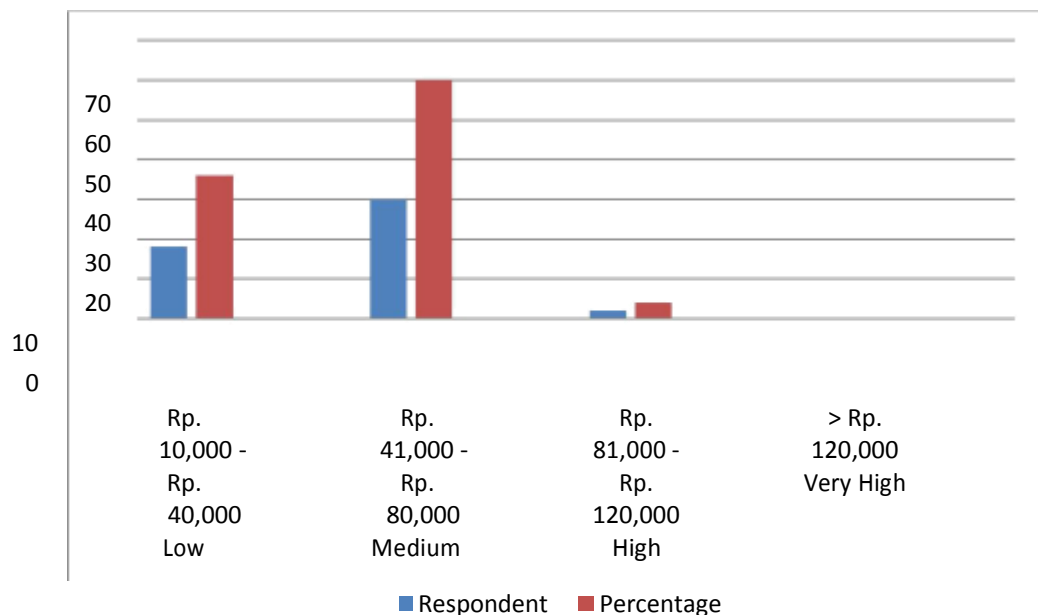


Figure 7. Respondent's WTP score

Source : data process by the authors

Most respondents as many as 30 people (60%) choose to pay in the medium category (Rp. 41,000 – Rp. 80,000). The respondents' willingness to pay in the low category (Rp. 10,000 - Rp. 40,000) is as many as 18 people (36%), and in the high category (Rp. 81,000 - Rp. 120,000) is as many as two people (4%). No respondents are willing to pay in the very high category (> Rp. 120,000). From the results of the survey interview and questionnaire, it is found that the respondents' minimum willingness to pay is Rp. 20,000, while the maximum willingness to pay is Rp. 100,000 and the median value of willingness to pay is Rp. 50,000.

3. Condition of Respondent's ATP and WTP

After comparing the ATP and the WTP scores, we divide them into two categories. Firstly, the captive riders are people who depend or are forced to use the existing airport train to travel. Secondly, choice riders are people who are able to travel in private vehicles or other modes but choose to use airport trains. There are a number of circumstances that can be seen in the figure below.

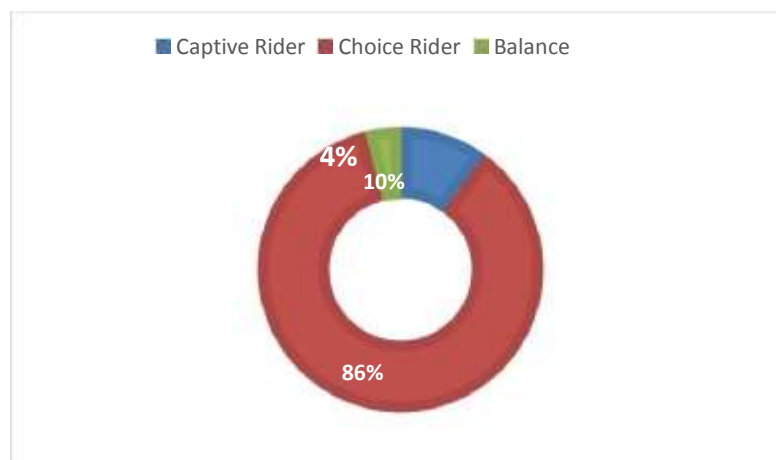


Figure 8. Percentage of captive rider and choice rider

In the picture, it can be seen that there are five respondents (10%) who are classified as captive riders, two respondents (4%) are classified as ATP and WTP balance, and 43 respondents (86%) are classified as choice riders

4. Ideal Fare Recommendation

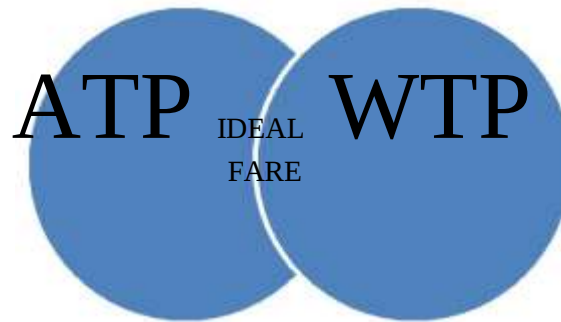


Figure 9. *Ideal fare*

As many as 98% of respondents are able to pay the current Rp 70,000 airport train fare. To get the ideal fare recommendation, The average sum between the average ATP and the average WTP scores are calculated. The result of the recommendation of the ideal fare obtained is Rp 84,297 and 70% of respondents are able to pay the fare.

After betterment of the quality on priority or the passengers services provided by the operator, the ideal fare recommendation becomes Rp. 91,947. Fortunately, the number of respondents with the ability to pay is the same as the number of respondents who is able to pay the fare at Rp 84,297 which is 70%. In determining the ideal tariff, it is very important to pay attention on how many users are able to pay at a certain fare.

Conclusion

Based on the above discussion, conclusion can be drawn into several points, i.e:

1. Soekarno-Hatta Airport Railway was made because there was accumulation on the highway that caused congestion so that the trip was interrupted. With this airport train, people have an alternative to travel to the Soekarno-Hatta airport which has no barrier and offer convenient facilities.
2. The average personal income per month of each respondent was Rp. 7,723,000 where the allocation for transportation was 20.52% of the personal income.
3. The airport railway users mostly feel that the fare charged is quite expensive, but the fact is the average users are capable to pay more because the result form average personal income per month is quite high and their ATP is bigger than the applicable fare.
4. From the data processed, it is showed that the average ability to pay of the respondents was Rp. 116,033 and the average willingness to pay of the respondents was Rp. 52,560. If there is an increase in quality, then the average amount that the respondents are willing to add is Rp. 15,300 so that the average willingness to pay of the respondents becomes Rp. 67,860.
5. The ideal fare recommendation at present time is Rp 84,297. If there is an increase in quality, the recommendation of ideal fare will be Rp 99,947. In this ideal fare there are 70% of respondents who are able to pay.

Suggestion

At last, the authors suggest other researchers to do similar studies on th following topics:

1. The authors recommend continuing the research on the analysis of the users' ATP and WTP towards the airport railway service from Bekasi Station and Batu Ceper Station to Soekarno-Hatta International Airport Station.
2. The authors suggests continuing the research on accessibility to BNI City Station.

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