Customer Satisfaction Analysis of LRT Feeder Transport: A Case Study of the Jakarta Metropolitan City

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Abstract

Public transportation is important to support all activities in the capital. However, in reality, many transportation services have not yet fulfilled an adequate level of satisfaction, so that public interest in using public transportation is still low. This is one of the causes of congestion in the metropolitan city of Jakarta. The purpose of this paper is to discuss the level of performance satisfaction and the level of service satisfaction on LRT feeder transport in the metropolitan city of Jakarta. This research method is carried out through surveys and questionnaires. Data were collected on the Rawamangun - Kelapa Gading route with 100 correspondents. The analysis conducted by an analysis of the importance and satisfaction level analysis Performance Analysis Importance (IPA). The results of this study indicate that the level of customer satisfaction still needs to be improved in terms of performance and comfort. This research is able to answer the results of reforming the integrated transportation system in the metropolitan city of Jakarta.

Keywords:
Feeder LRT, Importance Performance Analysis, Metropolitan City of Jakarta.

1. Introduction

Jakarta is the capital city of Indonesia, which is the center of government and economy, so public transportation is important to support all activities in the capital. Transportation is the activity of moving or transporting something from one place to another (Silaningsih et al., 2015). Public transportation is managed according to a schedule, operated on a predetermined route and charged a fee for each trip.

Public transport users have needs and preferences, including reliability, convenience, safety, comfort, accessibility, and affordability, which affect their satisfaction with the services provided. Facilities that affect public transport user satisfaction can be seen through a user survey. Transportation providers need to realize the importance of customer satisfaction because to retain old passengers and to attract new passengers. To improve the quality of the public transport system, the transport authorities have to identify priorities for improving passenger satisfaction (Imam, 2014).

Based on research from Tomtom's traffic index, it shows that congestion in Jakarta is in the 10th place, so this shows a public policy that prioritizes private vehicles. This shows that satisfaction with public transportation has not been fulfilled so that people prefer to use private vehicles instead of using public transportation (Thomaz, P. S. et al., 2016).

The following is one type of LRT feeder transportation in Jakarta, can be seen in the image below.
The purpose of this study is to determine the level of passenger satisfaction on the performance of the feeder transport that has been provided by the government to reduce the congestion that with the development of transport modes integrated with other transport systems network is one of them PT. Transjakarta feeder which provide transport in the form of Jaklingko and Bus. In this condition, there are several shortcomings that need to be improved, namely the suitability of the operational schedule caused by the Covid-19 pandemic and the existence of a passenger waiting room/area. Based on this case, it is necessary to analyze feeder transport customer satisfaction which includes the perceptions of feeder transport users in the Metropolitan city of Jakarta.

2. Literature Review

2.1. Modes Of Transportation

Mode of transportation is a term used to describe the means of transportation used to move from one place to another. The modes usually used in transportation can be grouped into modes that travel on land, sail in sea and inland waters, and modes that fly in the air. The landed mode can still be grouped into road mode, rail mode and pipe mode. Each mode has advantages in its respective fields. The government functions to develop all these modes in order to create a transportation system that is efficient, effective, and can be used safely. (Ardi Suhendra, 2016).

Transportation is the movement of people and/or goods from one place to another by using a vehicle in a road traffic space, aimed at creating safe, secure, orderly and smooth road traffic and transportation services. Feeder transportation provided by Transjakarta is Bus Rapid Transit and JakLingko.

2.2. Bus Rapid Transit (BRT)

Bus Rapid Transit is a bus system with transit that provides convenient facilities and affordable prices (hereinafter referred to as BRT). BRT has its own line with good operating characteristics with marketing support and customer service. BRT is growing as an effective option for urban communities compared to conventional systems. This is because of the various characteristics previously mentioned.

Bus Rapid Transit is a customer-oriented form of transportation and combines bus stops, vehicles, planning, and elements of the transportation system into an integrated system with one unique identity. Bus Rapid Transit has a number of flexibility compared to other transit modes, including those related to service routes. BRT routes can be tailored to suit user needs, government policies, and other dynamic conditions.

2.3. Service Quality

Service quality is an effort to fulfill the needs and desires of customers as well as the provision of its delivery to match customer expectations. Lewis & Booms argues that service quality is simply a measure of how well the level of service provided is in accordance with customer expectations (Pratiwi, 2017).

Quality of care can be assessed by several aspects with direct evidence (tangibles), including physical facilities, equipment, staff, and means of communication, reliability (reliability), namely the ability to provide promised service with immediate, accurate, and satisfactory Responsiveness (responsiveness), is the belief of the staff to help customers and provide service with responsiveness, assurance (assurance), covers the knowledge, skills, courtesy, and trustworthiness owned by its staff, free from danger, risk or doubt or ragu, empathy (empathy), including the ease of making relationships, good communication, personal attention, and understanding the needs of its customers (Novianti et al., 2018).

2.4. Customer Satisfaction

Kotler and Keller argue that satisfaction is the feeling of being happy or disappointed by someone that arises from comparing the product's perceived performance (or results) against their expectations. If performance fails to meet expectations, customers will be dissatisfied. If the performance is as expected, the customer will be satisfied. If the performance exceeds expectations, the customer will be very satisfied or happy. (Harmawan Riyadi Agung, 2012).
Tjiptono and Chandra argue that in general, customer satisfaction provides two main benefits to the company, namely in the form of customer loyalty and word of mouth advertising or what is commonly referred to as positive gethok tular. (Nurhalimah, Siti, Leonardo Budi Hasiholan, 2018).

3. Research Methodology

In this research, the required data sources are primary data and secondary data. The dependent variable used in this study is performance, while the independent variable itself is satisfaction. The results of selecting this variable come from field observations by seeing and feeling directly as a user.

The survey technique used in this study was a questionnaire distributed to 100 respondents. The questionnaire consists of 15 questions with answers in accordance with their position. Respond to the answer that best fits their point of view. The questionnaire in this study used an interval measurement scale, namely the Likert scale. Questionnaires on weekends and weekdays, and are on the route to the center of the Metropolitan City of Jakarta.

Analysis and processing of data from the results of the satisfaction survey and from the results of the questionnaire that received responses from respondents using feeder transportation. The results of the location survey will be compared with Transjakarta’s minimum service standards, while the results of the respondents' questionnaires will be tested using SPSS version 17.0 software. Presented using the Importance Performance Analysis (IPA) method because data will be generated in the form of indicators that need to be improved or reduced to maintain customer satisfaction, the results are relatively easy to interpret, the scale is easy to understand, and requires low costs.

3.1. Data Processing and Data Management

To collect data on performance and customer satisfaction, a questionnaire survey was conducted. The questionnaire is divided into five sections. The first part contains the characteristics of the respondent, such as gender, age or occupation. The second part contains questions about the conditions of the feeder transport, the third part concerns the performance of the feeder transport, the last part deals with facilities.

Correspondents are asked to provide an assessment of the performance and satisfaction of the feeder transport. The satisfaction scale and importance level are given by the line scale, which gives respondents a blank space to express their preferences and is not limited to the specific numbers available. Respondents can traverse any position in the queue to express their preferences freely. All questions in the questionnaire are provided in a closed form.

In this study, sampling was carried out by selecting sampling, only for those who had used feeder transport at the research location. Prior to the actual distribution, a computational survey was carried out by looking at the population of feeder transport users, by taking data from PT. Transjakarta.

3.2. Research Data Testing

In data processing, researchers used descriptive statistical data analysis techniques. This technique is used by researchers because the data collection is by distributing questionnaires, distributing this questionnaire using a pre-calculated sampling method using the Slovin formula which involves the population in the research area and processing it, the following tests are carried out:

3.2.1. Validity Test

The validity test in this study was carried out with the aim of indicating the extent to which the measuring instrument (instrument) measures what you want to measure. The question items in the questionnaire are declared valid if \( r > r_{\text{table}} \) (Febrinawati Yusup, 2018). The researcher uses the SPSS program to determine the validity of the results.

3.2.2. Reliability Test

This research will use Alpha Cronbach technique (c). This technique is used to measure the reliability of question items whose scores are in the form of a range of values (eg 0-10, 0-7) or a scale (or 1-3, 1-5). The Cronbach’s Alpha formula used is shown in the following formula:
\[ \alpha = \left[ \frac{k}{k-1} \right] \left( 1 - \frac{\sum \sigma_b^2}{\sigma_t^2} \right) \]

penjelasan:

\( \alpha \) = Instrument reliability coefficient (cronbach alpha)

\( K \) = the number of data variables that make up the latent variable

\( \Sigma \sigma_b^2 \) = the total variant of the item

Testing the reliability of a questionnaire there is a basis for decision making in advance, in determining the results of the reliability test, the SPSS program is used to determine the following results [7]:

If Value Cronbach's Alpha > 0.60, then it is reliable or consistent

If Value Cronbach’s Alpha <0.60, then it’s not reliable or consistent

3.2.3. Level Of Effectiveness

Data analysis begins with tabulating data from primary data collection for each variable, then the data is analyzed using descriptive statistics to determine the mean and standard deviation. The descriptive statistical results were analyzed and then entered into a Cartesius IPA diagram. To measure the extent to which the performance and satisfaction of researchers used the IPA method.

4. Result and Analysis

4.1. Feeder Transport Performance

The following picture below is a table recapitulation of the performance results of the Jakarta LRT feeder

<table>
<thead>
<tr>
<th>No.</th>
<th>Value Parameter</th>
<th>Unit</th>
<th>Value</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Rush Hour Load Factor</td>
<td>%</td>
<td>52.67</td>
<td>3</td>
</tr>
<tr>
<td>2.</td>
<td>Not Busy Load Factor</td>
<td>%</td>
<td>41.77</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>Speed Journey</td>
<td>Km/hour</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>Headway</td>
<td>Minute</td>
<td>9.84</td>
<td>3</td>
</tr>
<tr>
<td>5.</td>
<td>Travel Time</td>
<td>Minute/km</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>Service Time</td>
<td>Hour</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>7.</td>
<td>Frequency</td>
<td>Vehicle/hour</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>8.</td>
<td>Number of Operating Vehicles</td>
<td>%</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td>9.</td>
<td>The Beginning and end of Trip</td>
<td>Minute</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>10.</td>
<td>Circulation Time</td>
<td>Minute</td>
<td>137.84</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Quantity 28

<table>
<thead>
<tr>
<th>No.</th>
<th>Value Parameter</th>
<th>Unit</th>
<th>Value</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Rush Hour Load Factor</td>
<td>%</td>
<td>26.46</td>
<td>3</td>
</tr>
<tr>
<td>2.</td>
<td>Not Busy Load Factor</td>
<td>%</td>
<td>21.21</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>Speed Journey</td>
<td>Km/hour</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>Headway</td>
<td>Minute</td>
<td>10.24</td>
<td>2</td>
</tr>
<tr>
<td>5.</td>
<td>Travel Time</td>
<td>Minute/km</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>Service Time</td>
<td>Hour</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>7.</td>
<td>Frequency</td>
<td>Vehicle/hour</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>8.</td>
<td>Number of Operating Vehicles</td>
<td>%</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td>9.</td>
<td>The Beginning and end of Trip</td>
<td>Minute</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>10.</td>
<td>Circulation Time</td>
<td>Minute</td>
<td>53.44</td>
<td>1</td>
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</tbody>
</table>

Total Quantity 27

Results Overall Operating Performance feeder transport is Very Good with reference to the service performance standards Directorate General of Land Transportation.
4.2. Characteristics of Respondent's Data

![Graph showing frequency of transportation use]

Figure 3. Frequency using transportation Feeder LRT Jakarta

It can be seen that the results from 100 respondents, most of the results obtained are:
The frequency of using transportation ≤ 2 times a week is 65%;
The frequency of using transportation 3-5 times a week is 25%;
The frequency of using transportation ≥ 5 times a week is 10%.

4.3. Average Indicator

From the calculation of the average for each indicator as a whole, the following results are obtained:
A. The average dimension of service quality for the performance of feeder LRT Jakarta, Rawamangun - Kelapa Gading route reaches 3.86, so on average it can be said that the performance for each dimension of service has reached the Good category.
B. The average level of passenger satisfaction in each dimension reaches a value of 3.59, so on average it can be said that the satisfaction for the service of each dimension has reached the Good category.

4.4. Analysis IPA

From the data from the questionnaire results about the perceptions of feeder transport users analyzed using the IPA method, it can be seen that the IPA graph matrix is as follows:
1) Quadrant A which is the main priority is the suitability of service time (9) and cleanliness of the waiting room. (15).
2) Quadrant B attainment is maintained on the security indicators at control (6), physical condition and facilities (11), fleet facilities (12), presence of information boards (13).
3) Quadrant C with low priority in handling, there are indicators of certainty of getting a seat (7), certainty of arrival (8)
4) Quadrant D are considered redundant are indicators of punctuality of arrival (1), the reliability in the delivery of services (2), information about the fleet (4), the certainty of getting tickets (5), officials' understanding of the needs of the means (10), cleanliness at bus stop and in the fleet (14).
Results improved performance transport feeder provides very good influence for transport users feeder site area of research, it can be perceived as the satisfaction level just two indicators that gets top priority to make the performance of freight feeder, the better is the suitability of service time during the pandemic Covid-19 and the existence of a passenger waiting room at the research location.

5. Conclusion

Based on several previous studies, it was concluded that the performance condition of feeder transportation in the Metropolitan city of Jakarta still does not meet the minimum service standards, but currently the Jakarta city government continues to improve the quality of public transportation to make it comfortable for the public. The results of this study indicate that some improvements are still needed according to the test using the IPA method. It is found that the conditions that become priority improvements are the suitability of service times and the existence of passenger waiting rooms at the research location. Judging from this research, the performance conditions on other routes must also receive attention, such as the conditions in the Jakarta Metropolitan City Center area route in order to create public transportation that has good comfort.

References


Bibliografi

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