International Journal of Civil and Structural Engineering Research ISSN 2348-7607 (Online)
Vol. 5, Issue 1, pp: (118-124), Month: April - September 2017, Available at: www.researchpublish.com

Evaluation of Passenger on Electrical Railway Services (Case Study Tanah Abang–Serpong)

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Abstract: **Currently, Jakarta residents who choose private vehicles to conduct there activities, resulting in congestion every day and is the main problem in the capital city of Jakarta. The government of Jakarta is currently trying to move the use of private vehicles to public transport to reduce the volume traffic. This research discusses the evaluation of passenger satisfaction on KAI Commuter Line service of Tanah Abang - Serpong route, by using "importance performance analysis" method, then to analyzed Bivariate Correlation and Simple Linear Regression using SPSS program, with the sample number of 100 respondents. Based on the Linear Regression analysis done by the performance of officers has a significant relationship with the value of Pearson Correlation is 77.5%. Based on Cartesian diagram located in quadrant A, B, C and D obtained that service factors influence to increase passenger satisfaction received Ho.**

Keywords: **Quality of service, KAI Commuter Line, Performance Importance Cartesian Diagram Analysis.**

I. INTRODUCTION

Population growth in the capital city of Jakarta is very rapid. Based on data from the Central Statistics Agency of DKI Jakarta in 2014, the population of Jakarta Capital City is 10,075,300 people. Each year, residents from outside the region who want to find jobs in Jakarta, with the high growth rate in the capital raises the mobility in daily life which resulted in public demand for transportation services that enter everyday from outside Jakarta Such as Depok, Bogor, Bekasi, Cikarang, Tanggerang, Serpong, and Banten which increased the volume of vehicles in the capital. Currently there are still many Jakarta residents who choose private vehicles to conduct activities out of the house, resulting in congestion everyday and is the main problem in the capital city of Jakarta. The government of Jakarta is currently trying to move the use of private cars to public vehicles to reduce the volume of traffic.

Commuter Line Train Route Tanah Abang - Serpong route is one of the routes with high passenger density and often exceeds the capacity of passengers in the carriages. This is due to the multiple paths on the route. Therefore, it is necessary to analyze the quality of service to maintain public interest in Train commuter line.

Service is a top priority which is used as a benchmark in competitive advantage, and facility is a factor affecting services provided by the company. To achieve this it is necessary to work hard to provide services for service users in order to achieve a sense of service user satisfaction as to make the public transportation users feel comfortable, and make the service users prefer to use public transport from private vehicles.

Some of the related notions in the definition of service quality are:

1. Excellent is the standard of service performance obtained

2. Customers are individuals, groups, departments or companies that receive, pay for the output of services (services and systems)

3. Service is the main or complementary activities that are not directly involved in the process of making the product, but more emphasis on transactions between buyers and sellers.

4. Quality is something that can specifically be in touch or can not be touched from the nature of the product or service.

5. Levels is a statement of the system used to monitor and evaluate.

6. Consistent is no variation and all services run according to the standard set.

7. Delivery is providing the right service in the right way and in the right time.

For companies engaged in services, satisfying the needs of customers means to provide quality service (service quality) to customers, there are two quality service approaches are popular in use American business and has now spread to various countries in the world. The five characteristics of service quality are:

1) Tangibles (direct evidence) that includes physical facilities, equipment, employees, and means of communication.

2) Reliability that namely the ability to provide services immediately and satisfactorily and in accordance with the promised.

3) Responsiveness (capability), ie the desire of the staff to help the customers and provide services with responsiveness.

4) Assurance, which includes the capability, courtesy and credibility possessed by staff, free of danger, risk or doubt.

5) Empathy (perceived), which includes ease in relationships, good communication, and sincere attention to customer needs.

Customer perceptions of the quality of services provided by companies and public service agencies is the basis of efforts to improve service quality. Research on various parties with an interest in service delivery resulted in various factors that hamper the improvement of service quality. Sample size determination from of information obtained from PT. Jabodetabek Commuter railway in 2015, it is known that the number of peak public transport users is 914,840 people.

II. RESEARCH METHODS

In determining the level of passenger satisfaction Commuter Line Route Tanah Abang - Serpong to officer performance. Therefore a good methodology is needed to a guide for determine that need to be taken in order to get the level of user satisfaction to be achieved as to meet the need for efficient public transportation in Jakarta. The service attributes related to Railway Commuter Line Route Tanah Abang - Serpong are:

A. Place of service:

Commuter Line Train services include:

- Stations
- Counter
- Railway Car

B. Service quality:

- Direct / Physical Evidence (Tangibles)

Namely the condition of the facilities and infrastructure that support the passenger process either in the station, Counters and Train Car.

- Reliability

Namely how the ability in the implementation of good, precise and reliable both at the train station, Counters and inside the Railway Car.

- Capture / Reaction (Responsiveness)

Namely how the PT. Jabodetabek Commuter Train to evoke a sense of passenger confidence in the services provided.

- Guarantee / Assurance (Assurance)

C. ***Data Processing Technique:***

The calculation of the level of conformity between service quality based on the performance of PT. KAI Commuter Jabodetabek and passenger satisfaction on Commuter Line Jabodetabek Tanah Abang - Serpong Route. Where the level of conformity is the ratio of the weight of the value of service quality based on the performance value of PT. KAI Commuter Jabodetabek with passenger satisfaction value. This level of conformity determines the order of service priorities that affect passenger satisfaction. In this study there are two variables, namely variable x and variable y where:

- Variable x is the level of service quality based on the performance of officers PT. KAI Commuter Jabodetabek
- Variable y is the level of passenger transportation satisfaction Commuter Line route Tanah Abang - Serpong

Importance Performance Analysis formula:

TKi = Xi / (Yi) x 100%

Where :

TK i = Respondents' Conformity level

Xi = Weight of performance appraisal PT. KAI Commuter Jabodetabek

Yi = The weight of passenger satisfaction assessment

Then the horizontal axis (x) filled the performance value while the vertical axis (y) filled passenger satisfaction value.

Xi = (Σ Xi) / ni Yi = (Σ Yi) / ni

Where :

X = average value of performance level

Y = average value of satisfaction level

N = number of respondents

Cartesius diagram is a building divided into 4 (four) parts bounded by two lines intersecting perpendicular to the point (x, y), where x is the average of the value of service quality based on performance and y is the average of the value passenger satisfaction.

Xi = (Σ Xi) / K Xi = (Σ Xi) / K

Where ;

K = service quality factors that can affect satisfaction passenger.

III. RESULTS AND DISCUSSION

From the results of questionnaires obtained from 100 respondents that are commuter line passengers Jabodetabek Tanah Abang route - Serpong. In accordance with table 1, the passenger rating table on the performance of officers in the stations that have been sorted, then made a graph between the level of passenger satisfaction and officer performance with the weighted average value and service dimensions according to the number of questionnaire.

TABLE 1. AVERAGE CALCULATION OF PASSENGER SATISFACTION ASSESSMENT AND PERFORMANCE OF OFFICERS AT STATIONS

No	Elements - Elements Affecting Passenger Satisfaction	Performance assessment	Satisfaction Assessment	x	y
Direct evidence Physical (Tangibles)					
1	Station Accessibility	394	384	3.94	3.84
2	Waiting Room Facilities	367	414	3.67	4.14
Average Direct Evidence / Physical (Tangibles)				**3.81**	**3.99**
Reliability *(Reliability)*					
3	Friendly Station Officer Service	370	353	3.7	3.53
4	Officers Ready to Help	378	360	3.78	3.6
Average Reliability (Reliability)				**3.74**	**3.57**
Capture/reaction *(Responsiveness)*					
5	Ability Officers are quick to deal with problems that will arise.	362	375	3.62	3.51
6	Officers' ability to respond quickly to complaints submitted by passengers	348	345	3.48	3.45
Average - Capture / Reaction (Responsiveness)				**3.55**	**3.48**
Guarantees / Certainty (Assurance)					
7	Knowledge and Skills of the Officers at the Station	384	360	3.84	3.6
8	Make effective communication with passengers (info of delay)	344	337	3.44	3.37
9	The existence of a clear information board	380	408	3.8	4.08
Average - Guarantee / Certainty (Assurance)				**3.69**	**3.68**
Perceived (Empathy)					
10	Carers care to passengers	362	348	3.62	3.48
11	Security Guarantee to passengers	362	350	3.62	3.5
12	Cleanliness and neatness of stations and officers	390	413	3.9	4.13
Average Perceived (Empathy				**3.71**	**3.70**
	Average Total Quality of Service (X, Y)			**3.7**	**3.68**

TABLE 2. AVERAGE CALCULATION OF PASSENGER SATISFACTION ASSESSMENT AND PERFORMANCE OF OFFICERS AT TICKET COUNTERS

No	Elements - Elements Affecting Passenger Satisfaction	Performance assessment	Satisfaction Assessment	x	y
Direct evidence Physical (Tangibles)					
13	The counter space is clean and comfortable	392	417	3.92	4.17
Average Direct Evidence / Physical (Tangibles)				**3.92**	**4.17**
Reliability (Reliability)					
14	Easy ticket purchasing	383	400	3.83	4
Average Reliability (Reliability)				**3.83**	**4**
Capture / Reaction (Responsiveness)					
15	The ability of officers at the counter to provide explanations / information	380	381	3.8	3.81
Average - Response Responsiveness				**3.8**	**3.81**
Guarantees / Certainty (Assurance)					
16	Certainty get tickets	369	376	3.69	3.76
17	The suitability of the ticket price with the facilities obtained	366	382	3.66	3.82
Average - Guarantee / Certainty (Assurance)				**3.68**	**3.79**
Perceived (Empathy)					
18	Honesty officer	357	343	3.57	3.43
Average Perceived (Empathy)				**3.57**	**3.43**
Average Total Quality of Service (X, Y)				**3.76**	**3.84**

TABLE 3. AVERAGE CALCULATION OF PASSENGER SATISFACTION ASSESSMENT AND PERFORMANCE OF OFFICERS IN TRAIN WAGONS

No	Elements - Elements Affecting Passenger Satisfaction	Performance assessment	Satisfaction Assessment	x	y
Direct evidence Physical (Tangibles)					
19	Condition of Railway Car	402	421	4.02	4.21
20	Condition And Completeness Of Facilities In The Car Wagon (AC, Seating, Hanger)	396	400	3.96	4
21	Condition And Feasibility Of Safety Tool Inside Train Car	353	376	3.53	3.76
Average Direct Evidence / Physical (Tangibles)				**3.84**	**3.99**
Reliability (Reliability)					
22	Accuracy of Arrival & Departure Time (average 7 minutes)	350	325	3.5	3.25
23	On Time Travel (60 minutes)	341	320	3.41	3.2
Average reliability (Reliability)				**3.46**	**3.23**
Capture / Reaction (Responsiveness)					
24	Speed Officer In Train Car Completes Passenger Complaints	374	343	3.74	3.43
25	Ability Officer In Car In In Delivering Information	345	342	3.45	3.42
Average - Response Responsiveness				**3.60**	**3.43**
Guarantees / Certainty (Assurance)					
26	Officer Skills In Serving Passengers	378	344	3.78	3.44
27	Hospitality And Courtesy Officers	355	360	3.55	3.6
28	Passenger Comfort in Train Car	385	371	3.85	3.71
Average - Guarantee / Certainty (Assurance)				**3.73**	**3.58**
Perceived (Empathy)					
29	Toward Officer In Using Uniform	409	393	4.09	3.93
30	Officer's Ability to Provide Security to Passengers	370	383	3.7	3.83
31	Tidiness And Hygiene Train Wagon	414	439	4.14	4.39
Average Perceived (Empathy)				**3.98**	**4.05**
Average Total Quality of Service (X, Y)				**3.72**	**3.65**

After analyzing the calculation of the average passenger rating on the performance of officers based on the place of service, then made the calculation of the average passenger rating on the performance of officers in the place of service by dimension.

In accordance with the results of data processing questionnaire described in Cartesius Diagram "Importance Performance Analysis" above then we can describe as follows:

1. Service factors included in the top priority in services that are in Quadrant A Cartesius diagram "Importance Performance Analysis", are as follows: 3; 5; 6; 8; 10; 11; 18; 22; 23;

2. Service factors that must be maintained Performance Performance Service factors that must be maintained performance performance is the service factor located in quadrant B Cartesius diagram "importance performance analysis" is as follows: 4; 7; 24; 26; 28

3. Service Factor with Low Priority In Handling Service factor categorized low priority in handling is in quadrant C Cartesius diagram "importance performance analysis" is as follows: 2; 16; 17; 21; 30

4. Service Factor with High Priority in Handling Service factor categorized as high priority in handling is in quadrant D Cartesius diagram "importance performance analysis" is as follows: 1; 9; 12; 13; 14; 15; 19; 20; 29; 31

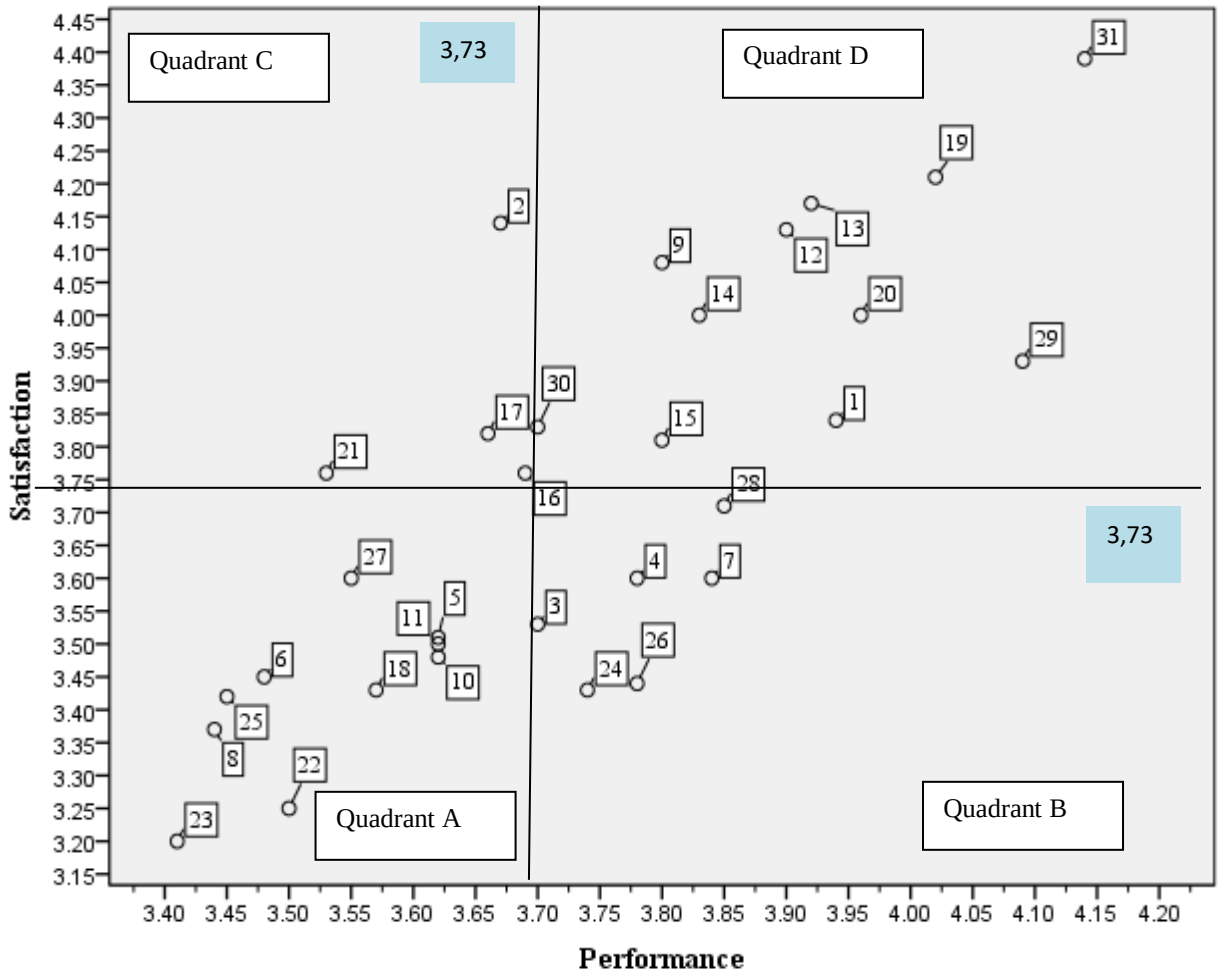

FIGURE 1: DIAGRAM OF CARETSIUS "IMPORTANCE PERFORMANCE ANALYSIS"

In regression test is used to predict or test the effect between officer performance and passenger commuter line satisfaction of Tanah Abang - Serpong route. Based on the average calculation data then obtained Linear Regression between officer performance and passenger satisfaction . the method used is enter in SPSS. The value of correlation (R) is equal to 0.775, then obtained the coefficient of determination (R2) of 0.600.

In the above table it is known that F arithmetic = 43.534 with significance level / probability 0.000 <0.05, then the regression model can be used to predict the participation variables. In the coefficient table, in column B constanta (a) is 1.027 while the performance value is 0.725, so the regression equation: Y = 1.239 - 0.896 X.

From the above analysis obtained hypothesis:

- Ho: no significant effect (significant) performance variable officer (X) on satisfaction (Y).
- H1: there is a tangible influence (significant between officer performance variable (X) on passenger satisfaction (Y).

With the value of t arithmetic = 6.598 with significant 0,000 <0.05, then Ho is rejected and H1 accepted, which means there is a significant effect (significant) performance variable officer (X) on passenger satisfaction (Y)

IV. CONCLUSION

Based on research KAI Commuter Line with Tanah Abang - Serpong route is included in maintaining the achievement (quadrant B), feel satisfied and the performance of both but need to be improved on some service factors that are still below the expectations of passengers to match the desired expectations of passengers that is improve on the service factor located in quadrant A. Based on Chi-Square testing it is found that officer's kineja factor does not affect passenger's satisfaction level.

ACKNOWLEDGMENT

I owe my gratitude to all those people who have made this work possible and because of whom my experience has been one that I will cherish forever.

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