

Passengers Satisfaction Analysis of Quality and Schedule of Commuter Line Service: A Case Citayam-Tebet Route

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Abstract

Commuter Railways (KRL) is one of Indonesia's modes of mass transportation, especially in the Jabodetabek area. The existence of KRL makes it easier for people to travel, so it is necessary to emphasize service quality in following its users' wishes. This paper aims to increase KRL user satisfaction with KRL services and schedules. Questionnaires were distributed to 100 respondents at the station and on the KRL. The data analysis method used is the Importance Performance Analysis method which is processed using Microsoft Excel. From the analysis results, nine variables are considered essential but still need to meet the expectations of KRL users, so they become the top priority. Then, seven variables are considered essential and have met expectations, so these variables must be improved. Based on the research results on the level of passenger interest in the Citayam-Tebet KRL route, an average value of 4.60 is obtained with an average level of performance of 4.11, which means that the variable is still not as expected and does not meet the satisfaction of KRL passengers.

Keywords: Commuter Line, Passenger Satisfaction, Service Quality, Schedule

1. Introduction

Public transportation is currently one of the modes most people in the world widely use for mobilization. People choose to use public transportation because public transportation is faster, more convenient, cleaner, and safer. Especially in large metropolitan areas like Seoul, South Korea, with a population of 20 million, residents use the subway as their primary public transportation due to its punctual travel time (Kim, Kim, Kang, & Song, 2017). Public transportation is an essential economic sector in the Philippines that connects people and financial centers across the island (Gumasing, Prasetyo, A, S., & Nadlifatin, 2022). The leading indicators of public transportation services include accessibility, travel time, departure frequency, cost, and safety (Šipuš & Abramović, 2017). The existence of public transportation can also provide solutions to reduce congestion that often occurs in big cities around the world.

Public transportation in Indonesia currently focuses on providing mass transportation. Mass transport in Indonesia has progressed, starting with the existence of BRT (Bus Rapid Transit), KRL (Electric Rail Train), LRT (Light Rail Transit), and MRT (Mass Rapid Transit). However, few Indonesians are currently switching to mass transportation modes because it is faster and cheaper. As one of the mass transportation in Indonesia, KRL (Kereta Rel Listrik) has excellent potential as a solution to the increasingly complex urban transportation problems (Aisyah, Salim, & Sofyan, 2019).

For some people who work in Jakarta, where most citizens come from various surrounding cities, such as Bogor, Depok, Tangerang, and Bekasi, KRL Commuter Line is one of the community's choices as a mode of public transportation. The existence of the KRL Commuter Line makes it easier for people to travel. It can save costs and travel time and be free from congestion because it has its lane. KRL Commuter

Line emphasizes service quality by following its users' wishes. The improvement of the quality of KRL Commuter line services and other most important factors that determine passenger satisfaction are essential facilities, safety, and security and the behavior of KRL Commuter Line officers towards passengers.

KRL Commuter Line as mass public transportation is still being improved. However, some obstacles still need to be found, such as delays in the Commuter Line KRL schedule that comes not according to the time. It certainly causes unrest for KRL Commuter Line users, especially during peak hours on Monday-Friday at 06.00-08.00 WIB and 16.00-18.00 WIB. This delay will affect the level of satisfaction of KRL Commuter Line users, resulting in a decrease in the number of passengers who switch to using mass public transportation modes.

The existence of the KRL Commuter Line is one of the modes of mass transportation that aims to travel quickly, overcome congestion, and avoid pollution. The public transportation system has been developed gradually and will continue over the next few years (Farda & Lubis, 2018). Mobilization by public transport provides an opportunity to reduce the adverse environmental and health impacts of motor vehicle use. The more people who use public transportation, it is hoped that it will reduce the use of private vehicles, which results in congestion. This research aims to increase the satisfaction of Commuter Line KRL users with Commuter Line KRL services and schedules.

2. Literature Review

2.1 *Electric Rail Transportation Mode*

Trains are a means of public transportation that runs on rails. Trains generally consist of a locomotive and a series of relatively large trains or carriages to accommodate many passengers. Electric rail trains, abbreviated as KRL, are rail trains that move with an electric motor propulsion system. During the Dutch East Indies, KRL was first used to connect Batavia with Jatinegara or Meester Cornelis in 1925. At that time, the KRL series used as many as two trains that could be related to four trains.

Indonesia's railway industry is considered one of the strategic industries that can support the realization of the provision of rail-based public transport facilities. Railway transportation modes will increase yearly along with domestic infrastructure projects (Utomo, Nugroho, Sasongko, & A. Krisnowo, 2020). Railways are an ideal means of transportation as mass transportation with high capacity. However, the government's attention to facilitating railway facilities and infrastructure still needs to be more optimal (Aisyah, Salim, & Sofyan, 2019).

PT currently manages KRL Indonesia. Kereta Commuter Indonesia, one of the subsidiaries within PT. Kereta Api Indonesia (Persero) contains the Jabodetabek Commuter Train and its surroundings. This subsidiary's establishment was born from stakeholders' desire to focus more on providing quality services and being part of the solution to increasingly complex urban transportation problems. The range of KRL Commuter Line travel routes reaches 418.5 km covering the suburbs of Jakarta to go Rangkasbitung, located in Banten province (PT. KAI Commuter, 2022).

The KRL Commuter Line system, as of March 2021, has around 80 stations throughout the Jabodetabek area and has 1,196 units of KRL Commuter Line in operation. To make it easier for passengers to buy tickets at the station, the Commuter Line also has around 164 ticket machines that can be found at each station. The Commuter Line allows for a significant movement of people around DKI Jakarta. The number of daily passengers has increased and reached an average of 993,804 passengers/day in 2017 and reached its daily passenger peak of 1,065,522 passengers/day (Farda & Lubis, 2018).

2.2 *Quality of Service*

Service quality measures the standard of service provided to customers (Irtema, et al., 2018). Thus, transportation service quality reflects the overall satisfaction of public transport users with the service provided by public transport authorities (Ibrahim, Borhan, Zakaria, & Zainal, 2019). In addition, it refers to the general assessment of the service by customers, whether or not the service meets or exceeds their

expectations.

Service quality is an important performance indicator for realizing satisfaction and loyalty to the company. Improving service quality is considered an essential strategy for a company's success in market competition (Agustien & Haryono, 2021). Implementing good quality public transport services or, in other words, meeting the needs and expectations of passengers creates a slick and quality urban transportation system. Service quality relates to specific service attributes (e.g., frequency, cleanliness, comfort, speed, etc.).

Railways, one of the largest organizations providing passenger transport services, must consider the needs of passengers. Therefore, satisfaction with the quality of service provided by passengers is very important in attracting public interest in rail transportation and their loyalty (Farajpour, Kisomi, & Bagheri, 2017). There are eight indicators of the quality of public transportation services: availability of transportation modes, accessibility, information, time, customer service, comfort, safety, and environmental impact (Inturri, Giuffrida, Le Pira, Fazio, & Ignaccolo, 2021).

Service quality is a combination of technical and functional, where functional service quality refers to the specifications of receiving services to customers. In contrast, technical service quality refers to what customers receive. The concept of customer service quality covers aspects of transportation services, which are only sometimes well-defined and easy to measure.

2.3 Customer Satisfaction Analysis

According to Oliver (1980), customer satisfaction is a measure of the mismatch between customer expectations before purchasing a service or product and their evaluation of that service or product after consumption (Nunkoo, Teeroovengadam, Ringle, & Sunnassee, 2020). Customer satisfaction is related to service quality by understanding customer satisfaction. Customer satisfaction is the focus of serving customer needs. Customers satisfied with the accuracy of the schedule, the facilities provided, and the affordable cost will improve the quality of public transportation services. Satisfaction is related to a clear perception or an affective assessment (liking, feeling, pleasure, etc.).

Tse & Wilton (1988) say that satisfaction is usually related to customers' emotional response to a product or service experience and their expectations and actual performance (Kospandani & Wahyudi, 2021). Then Wong and Sohal (2003) state that satisfying many consumer expectations of service results in a higher probability of repurchasing for the company (Leninkumar, 2017). Today, customer satisfaction is an essential issue for most business organizations (Wahab & Khong, 2019).

A good relationship between trust and empathy leads to the formation of trust between associates and customers who primarily focus on empathy issues to serve their customers more and better. In addition, trust and empathy are essential in helping the association become a better work environment. Customer satisfaction is an estimate that decides how pleased the purchaser or customer is with the organization's items (products), administration, and capacities (Ali, et al., 2021). Public transport passenger satisfaction is also influenced by several factors that vary not only from person to person but also by changing demographics (Hussain, Zefreh, & Torok, 2018).

According to Bhinawan and Ali (2017), customer satisfaction indicators are expectations, experience, overall satisfaction, recommending other products, and showing immunity to offers from competitors (Wydyanto & Ilhamalimy, 2021). Customer satisfaction is generally about how customers feel about a service or product. The level of customer satisfaction is relative, depending on how much benefit and pleasure is received, where the enjoyment will encourage customers to repurchase the service or product (Maisarah, et al., 2020).

3. Methodology

This research is in the Citayam Station to Tebet Station area. The research location map can be seen in figure 1.

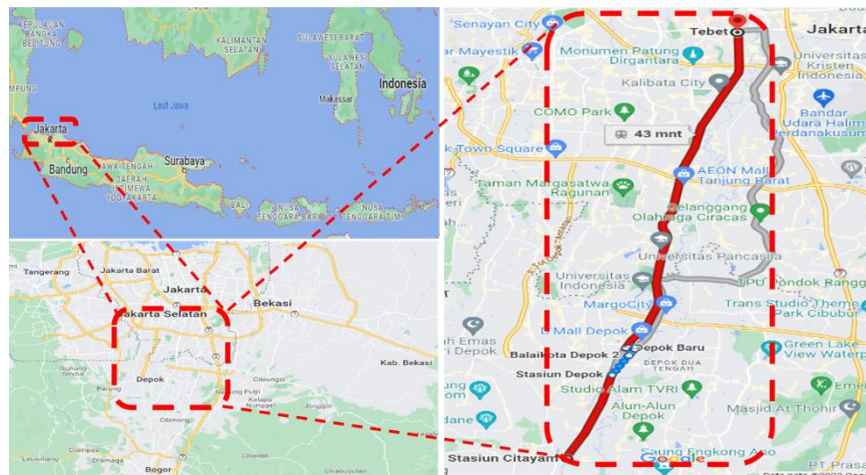


Figure 1. Location of research

KRL Jabodetabek has 5 travel routes. These routes include Lin Bogor, Lin Rangkasbitung, Lin Tangerang, Lin Lingkar Cikarang, and Lin Tanjung Priok. The Citayam-Tebet KRL route is included in Lin Bogor. Meanwhile, the Citayam to Tebet KRL route can be seen in figure 2.

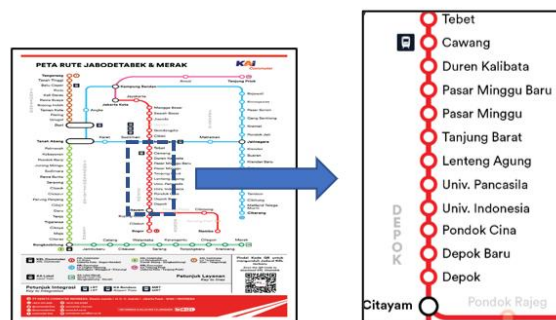


Figure 2. The Route of Citayam-Tebet KRL

Data is one of the leading forces in structuring scientific research and modeling (Rifai, Hadiwardoyo, Correia, Pereira, & Cortez, 2015). This research uses quantitative descriptive data analysis methods with data collection techniques conducted through interviews or interviews using questionnaires in the form of google forms. Primary data in this study were obtained by distributing questionnaires to Citayam-Tebet KRL passengers. This questionnaire will be distributed to 100 respondents at both stations and KRL commuter lines. Data collection is carried out on weekdays, Monday-Friday, and at 06.00-08.00 WIB and 16.00-18.00 WIB. Systematic scientific research must identify a particular problem (Rifai, Hadiwardoyo, Correia, & Pereira, 2016).

Secondary data in this study were obtained from various literature, research journals, and the official website of PT KAI Commuter Jabodetabek. The data that has been collected is then analyzed using the Importance Performance Analysis (IPA) method. In processing data with the IPA method, the first thing to do is to recapitulate the results of the questionnaire assessment obtained. The IPA method classifies service indicators into four quadrants on a Cartesian diagram based on importance and satisfaction, as shown in figure 3.

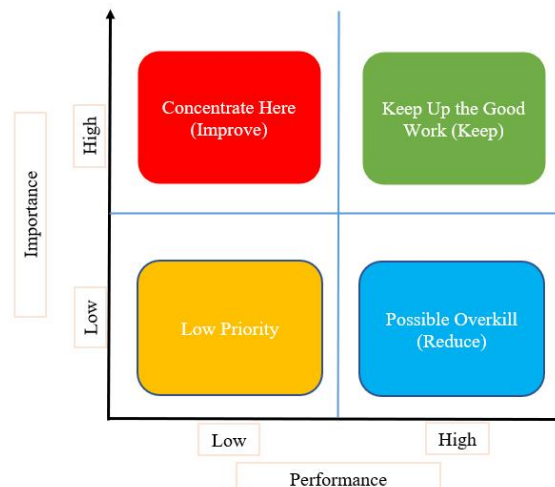


Figure 3. Importance Performance Analysis (IPA) Diagram

In the Concentrate Here quadrant, some factors are considered necessary by customers, but these factors still need to be in line with customer expectations. Therefore, the variables in this quadrant must be improved. In the Keep Up the Good Work quadrant, there are factors considered essential and expected by customers to be under what customers feel. Therefore, the variables in this quadrant must be maintained. Customers consider some factors less critical in the Low Priority quadrant, and their performance is also low. Therefore, variables in this quadrant can be addressed without paying more attention or can be ignored. Finally, customers consider some factors less critical and unexpected in the Possibly Overkill quadrant. So, variables in this quadrant can be reduced to save costs or allocated to other factors with higher priority. The assessment variables used as indicators in this study can be seen in table 1.

Table 1. Variable of Research

No	Aspects	Code	Variable	Source
1	Reliability	B1	The ease of reaching the location of the station	Permatasari D, (2017), Muafa Rafif (2022)
		B2	The train always arrives at the destination on-time	Permatasari D, (2017), Muafa Rafif (2022),
		B3	The availability of information related to the train schedule	Ismail Ahmad Bagus (2020), Luke R, Heyns G (2017)
		B4	The ease of getting clear information	Zein Ali El (2019), Listifadah (2020), Paulina Jesica, Sari Christina, Rintawati Dewi (2020)
		B5	The staff is always willing to help passengers.	Yulianto Harry, Yahya Syarief Dienan (2018), Ismail Ahmad Bagus (2020), Muafa Rafif (2022)
2	Assurance	B6	Train is clean and well maintained	Permatasari D, (2017), Muafa Rafif (2022), Listifadah (2020)
		B7	Waiting areas are sheltered.	Zein Ali El (2019), Listifadah (2020), Paulina Jesica, Sari Christina, Rintawati Dewi (2020), Febriandi M. Iqbal (2017)
		B8	Waiting areas are clean and well maintained.	Permatasari D, (2017), Muafa Rafif (2022)

No	Aspects	Code	Variable	Source
		B9	The safety and comfort either in the station or train	Permatasari D, (2017), Muafa Rafif (2022), Yulianto Harry, Yahya Syarief Dienan (2018)
		B10	The hospitality and politeness in serving the customer	Isradi, Stini Lensi, Dermawan, Muftidin (2021), Zein Ali El (2019), Listifadah (2020)
3	Tangibility	B11	Availability of counters at the station	Muafa Rafif (2022)
		B12	Availability of tools to inform travel routes	Muafa Rafif (2022), Yulianto Harry, Yahya Syarief Dienan (2018)
		B13	Air circulation in the train	Yulianto Harry, Yahya Syarief Dienan (2018), Ismail Ahmad Bagus (2020)
		B14	Availability of safety facilities	Ismail Ahmad Bagus (2020), Luke R, Heyns G (2017)
		B15	Availability and condition of facilities for passengers with special needs	Paulina Jesica, Sari Christina, Rintawati Dewi (2020)
4	Empathy	B16	The 24/7 customer service	Permatasari D, (2017), Ismail Ahmad Bagus (2020)
		B17	The capability of the staff in providing information to the customers that is easy to understand	Listifadah (2020), Paulina Jesica, Sari Christina, Rintawati Dewi (2020)
		B18	Honesty and patience of employees/officers in providing services	Permatasari D, (2017), Muafa Rafif (2022)
		B19	The price of the ticket	Permatasari D, (2017), Muafa Rafif (2022), Luke R, Heyns G (2017), Ismail Ahmad Bagus (2020)
		B20	The manner staffs to respect and serve the customers, especially the customers' need	Permatasari D, (2017), Ismail Ahmad Bagus (2020), Paulina Jesica, Sari Christina, Rintawati Dewi (2020)
5	Responsiveness	B21	The speed and accuracy in giving information that customers need	Zein Ali El (2019), Listifadah (2020), Paulina Jesica, Sari Christina,
		B22	The speed and readiness of the staff in giving service to the customers until it is all clear	Zein Ali El (2019), Listifadah (2020), Paulina Jesica, Sari Christina, Rintawati Dewi (2020)
		B23	Officers provide assistance related to problems using tickets.	Zein Ali El (2019), Listifadah (2020), Paulina Jesica, Sari Christina, Rintawati Dewi (2020)
		B24	The speed in responding customers' complaints and problems	Yulianto Harry, Yahya Syarief Dienan (2018), Ismail Ahmad Bagus (2020)
		B25	Emergency response	Listifadah (2020), Paulina Jesica, Sari Christina, Rintawati Dewi (2020)

4. Result and Discussion

Based on the survey results, the number of respondents was 106 people. The characteristics of the respondents can be seen in table 2.

Table 2. Characteristic of Respondents

Characteristic of Respondents		Percentage
Gender	Male	38,7%
	Female	61,3%
Age	< 20 years old	4,8 %
	21-30 years old	61,9%
	31-40 years old	17,1%
	41-50 years old	8,6%
	51-60 years old	6,7%
	>60 years old	1%
Occupation	Student	10,4%
	Civil servant	6,6%
	Private employee	68,9%
	Housewife	8,5%
	Entrepreneur	0,9%
	Teacher	1,9%
	Internship	0,9%
	Veterinarian	0,9%
	Honorary employee	0,9%
Income	< Rp.1.000.000/month	12,3%
	Rp. 1.000.000 – Rp. 3000.000/month	31,1%
	Rp. 3.000.000 – Rp. 5.000.000/month	35,9%
	>Rp. 5000.000/month	21,7%
Destination	Working	57,5%
	School	4,6%
	Visiting family	14,2%
	Stroll	22,6%
	Shopping	0,9%

Based on the survey results, the respondents were dominated by female respondents at 61.3%. However, 61.9% of respondents in this study were between 21-30 years old. The profession of the respondents is 68.9% private employees, and the most income ranges between Rp. 3000,000 - Rp. 5,000,000/month, which is 35.9%. Meanwhile, the purpose of most trips is to work at 57.5%. The analysis results of the level of importance and satisfaction using the IPA method are presented as a cartesian diagram

in Figure 4.

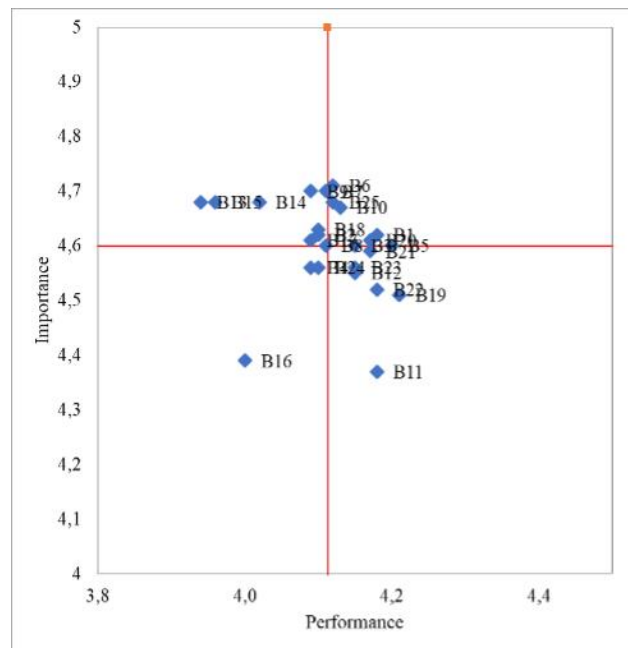


Figure 4. Cartesian Diagram

Based on Figure 4, seven variables in quadrant II are essential and have met customer expectations, so quality must be maintained. The variables are the ease of reaching the location of the station (B1), the availability of information related to the train schedule (B3), the staff is always willing to help passengers (B5), trains are clean and well maintained (B6), the hospitality and politeness in serving the customer (B10), the manner's staffs to respect and serve the customers, especially the customers' need (B20), and emergency response (B25). Then, in quadrant III, where this quadrant is considered not so important, and its performance is also low, there are three variables that these variables can be ignored. These variables include the ease of getting precise information (B4), the 24/7 customer service (B16), and the speed in responding to customer complaints and problems (B24).

In quadrant IV, six variables are obtained that are considered less important and not too expected by customers so that the variables in this quadrant can be transferred to other variables that need to be improved. The seven variables include the availability of counters at the station (B11), the availability of tools to inform travel routes (B12), ticket prices (B19), speed and accuracy in providing the information needed by customers (B21), speed and readiness of officers in delivering services to customers until everything is clear (B22), and officers help related to ticket usage problems (B23). Meanwhile, nine variables are top priorities, so they must be improved because they are considered essential but not following customer expectations. These variables are trains always arrive at their destination on time (B2), sheltered waiting room (B7), clean and well-maintained waiting room (B8), security and comfort both at the station and in the train (B9), air circulation in the train (B13), availability of safety facilities (B14), availability and condition of facilities for passengers with special needs (B15), the ability of officers to provide information to customers that is easy to understand (B17), and honesty and patience of employees/officers in providing services (B18).

5. Conclusion

Based on the results of research on the level of passenger interest in the Citayam-Tebet KRL route, an average value of 4.60 is obtained with an average performance level of 4.11, which means that the variable is still not as expected and does not meet the satisfaction of KRL passengers. The variables in quadrant I still dominate, so they become the top priority to be addressed. Improving service quality to get

maximum satisfaction to KRL users can generate loyalty and maximize the use of public transportation as a transportation mode for activities.

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