COMMUNITY PERCEPTIONS OF URBAN TRANSPORT PERFORMANCE (Case Study of Public Transport 03 Bubulak-Baranang Siang Route, Bogor City)

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ABSTRACT

Angkutan Kota or commonly called "Angkot" is one of the public transportation that is often found in Bogor. One of the Angkot routes in Bogor is Angkot 03 in the Bubulak-Baranangsiang route. This public transportation has a bad category for the service performance dimension with a poor category. This can be seen from public transportation services such as passenger volume, distance traveled, and stopping at any place to look for passengers. With services in the deficient category, it can reduce people's interest in using public transport in this direction, both for existing users and potential potential users. Therefore, it is necessary to pay attention to the satisfaction of users and the satisfaction of the community around the public transportation route towards public transportation in this direction. The aim of this research is to determine the performance of public transportation services based on the perceptions of public transportation users and the surrounding community. Data from this research were obtained from distributing questionnaires to passangers of Angkot 03 in the Bubulak - Baranangsiang route and people living around the public transportation route. The results of the questionnaire were analyzed using the IPA method to determine the gap between expectations and performance of public transportation services. Based on the results of the analysis, it can be seen that there are the same variables that need to be improved between the perceptions of city transport passengers and the surrounding community, namely variable 12 (Drivers are courteous, kind, and doesn't smoke).

Keywords*: Angkot, Index Performance Analysis, Bubulak-Barangsiang, Performance*

INTRODUCTION

One kind of transportation that is frequently available in Bogor, also known as the City of a Thousand Angkot, is Angkutan Kota, or Angkot. On the other hand, there are a number of signs that this mode of transportation is performing poorly. The age of the vehicles, which is fairly old, the lack of a set departure time, the comparatively low fares, the excess capacity of passengers during peak hours, and other services that can be said to be less able to provide more value for passengers are the obstacles seen in Bogor's city public transport services passangers of public transit (Robby et al., 2016). The fact that public transportation options stop everywhere and create traffic, usually on major routes, is quite concerning.

These barriers affect the quality of urban transportation services and their performance, which in turn lowers the amount of urban transportation that is used (Aminah, 2007). Drivers engage in parking activities as a result of the consequences of the decline in passengers using public transit, which also lowers their daily revenue. This check-in process adds time to the journey. If the standard of municipal transportation keeps getting worse, people will be less sympathetic to those who use it because they will believe that it does not meet their needs or expectations. In situations where the performance of public transportation services does not align with the user's expectations or interests, they will explore alternative options, such as purchasing a private vehicle or using online transportation. According to research on commuter line which is a rail based transportation satisfaction, travel time punctuality are one of the characteristics that must be maintained (Meutia and Yuliana, 2019). It is evident that the high usage of commuter lines is caused by the certainty of having to wait for a train, yet this presents challenges for city transit.

According to Iman et al. (2019), City Transport code 03 on the Bubulak-Baranangsiang route falls into the low category for the service performance component. Passenger volume, public transportation journey distance, and operational performance are the three service performance metrics under consideration. When public transportation performance falls short of expectations, people may become less interested in using it. As a result, when it comes to public transportation in this direction, it is vital to consider how satisfied the community and users are surrounding specific routes, so that in the future, urban transportation services might be improved in accordance with passanger preferences.

It is necessary to assess the services offered in order to determine how well urban transportation services are performing. One approach to evaluate the effectiveness of urban transportation is to collect data via surveys from clients or service users. Surveys are used to find out how satisfied clients or service users are with an individual's or a service unit's performance (Santoso dan Sartono, 2011). The purpose of this research is to evaluate Angkot services' performance by looking at how the general public and public transportation passangers perceive them.

METHOD

Questionnaires were distributed as part of the investigation during October 2021, the Covid-19 epidemic period. People who use the urban transportation system and those who live nearby were the target responders. These target respondents were picked because they are current users of public transportation, and those who live near public transit lines may become users in the future. The questionnaire that has been designed contains 2 parts, namely general data on respondents (Gender, Age, Occupation, Latest Education, Monthly Income and Personal Vehicle Ownership) and questions regarding performance (Security, Safety, Comfort, Affordability, Equality and Regularity) according to Ministerial of Transportation Regulation Number 98 Year 2013.

Table 1. Variables in Performance Questions

Variable Number	Performance Variables
1	There is not an overabundance of music playing on public transit
2	Car windows are transparent in Angkot.
3	Passengers in Angkot are protected from pickpocketing
4	There are health protocols in Angkot
5	Avoid sexual harassment
6	There is distance between seats
7	Vehicles are not allowed to pass other cars in front of them
8	Drivers do not drive angkot recklessly
9	The speed of public transportation is felt to be neither too fast nor too slow
10	Modernization of the fleet for public transit
11	The state of cleanliness in transit
12	Drivers are courteous, kind, and doesn’t smoke

Variable Number	Performance Variables
13	The driver is well-groomed
14	Passenger capacity does not exceed the available seats
15	Angkot implements the health protocols that have been established during the pandemic
16	There are no buskers
17	Air circulation in Angkot is sufficient
18	The walking distance to get Angkot is less than 200 m
19	Timely departure of Angkot
20	Angkot runs according to the route (Angkot Route)

Respondents were asked to fill out a performance questionnaire and received expectations by giving a rating of 1 to 5 using a Likert scale. Scale information will be shown in Table 2.

Table 2. Likert Scale Assessment

Scale	Performance	Expectation
1	Strongly Disagree	Very unimportant
2	Disagree	Not important
3	Simply Agree	Quite important
4	Agree	Important
5	Strongly Agree	Very important

Importance Performance Analysis (IPA)

IPA analysis is used to measure urban transportation performance based on satisfaction felt by respondents. To analyze IPA a formula is needed, namely (Solichin I, 2010):

$T_k = \frac{Xi}{Yi} x100\%$

Whereas:
T_k = Performance Level
X^i = Value of Consumer Performance
Y^i = Value Expectations of Consumers

IPA-model is divided into 4 quadrants as shown in Figure 1

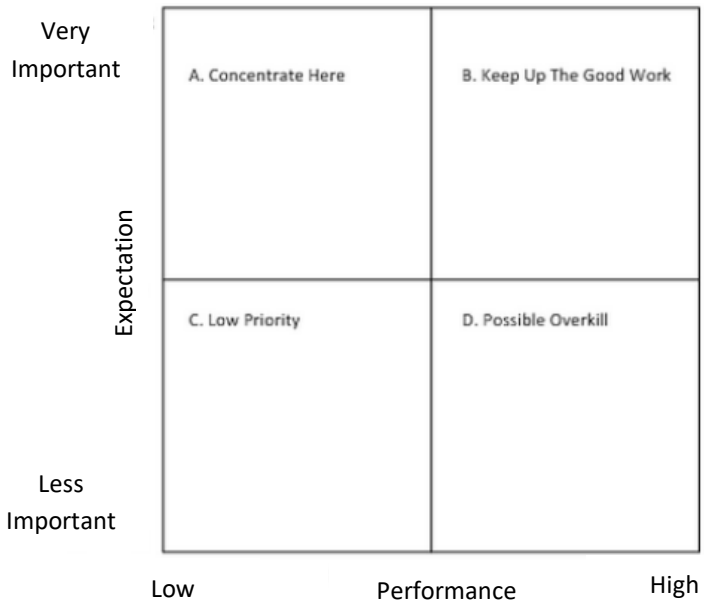


Figure 1. Importance Performance Analysis Quadrant

The following is an explanation of each quadrant of the IPA model:

a. Quadrant A: Top Priority (Concentrate Here)
Factors in this quadrant are considered very important compared to other factors, the management is obliged to provide more resources and pay more attention to this quadrant.

b. Quadrant B: Keep Up The Good Work
Factors in this quadrant are expected to be supporting factors for customer satisfaction, the management is obliged to maintain the achievements that have been achieved.

c. Quadrant C: Low priority
Factors in this quadrant have a lower priority level than other factors. Management does not need to prioritize this quadrant.

d. Quadrant D: Excessive (Possible Overkill)
Factors in this quadrant are considered not very important. So the management needs to allocate this factor to other factors. This factor requires more handling from the management

RESULTS AND DISCUSSION

The results of the survey conducted in October 2021 obtained data on the characteristics of respondents as presented in Table 3.

Table 3. Respondent Data Characteristics

	Percentage of Angkot Passanger	Those who reside near routes used by Angkot
Gender	Male (40%); Female (60%)	Male (20%); Female (80%)
Age	<18 Years Old (16%); 18 – 25 Years Old (52%); 25–40 Years Old (30%); 40–60 Years Old (2%); > 60 Years Old (0%)	<18 Years Old (10%); 18 – 25 Years Old (26%); 25 – 40 Years Old (22%); 40 – 60 Years Old (42%); > 60 Years Old (0%)
Occupation	Student (32%); Civil Servant (8%); Self-employed (44%); Wiraswasta (12%); Housewife (4%); Retired (0%); Others (0%)	Student (18%); Civil Servant (2%); Self-employed (56%); Wiraswasta (16%); Housewife (2%); Retired (6%); Others (0%)
Education	Elementary School (4%); Junior High School (10%); Senior High School (30%); Bachelor (48%); Magister (6%); Doctor (2%)	Elementary School (0%); Junior High School (12%); Senior High School (22%); Bachelor (62%); Magister (2%); Doctor (2%)
Income	<1 Million (18%); 1 – 2,5 Million (18%); 2,6 – 5 Million (34%); 5 – 10 MIllion (24%); 10 - 15 Million (2%); >15 Million (4%)	<1 Million (14%); 1 – 2,5 Million (12%); 2,6 – 5 Million (26%); 5–10 Million (44%); 10-15 Million (2%); > 15 Million (2%)
Transportation Costs/Month	< 500.000 (92%); 500.000 – 1 Million (6%); 1 – 1,5 Million (0%); 1,5 – 2 Million (0%); >2,5 Million (0%)	<500.000 (98%); 500.000 – 1 Million (0%); 1 – 1,5 Million (0%); 1,5 – 2 Million (0%); > 2,5 Million (2%)
Motorcycle Ownership	0 (8%); 1 (44%); 2 (46%); 3 (2%)	0(2%); 1 (20%); 2 (66%); 3 (10%); >3 (2%)
Car Ownership	0 (66%); 1 (28%); 2 (4%); 3 (2%)	0 (34%); 1 (64%); 2 (2%); 3 (0%)
Desired time to delayed	< 1 Minutes (70%); 1-3 Minutes (28%); 3- 6 Minutes (0%); 6 – 9 Minutes (2%); >9 Minutes (0%)	<1 Minutes (66%); 1-3 Minutes (32%); 3- 6 Menit (0%); 6 – 9 Minutes (2%); >9 Minutes 0%)
Frequency of using public transportation in 1 week	1–3 Times (64%); 3–5 Times (18%); 5–10 Times (16%); < 10 Times (0%)	1–3 Times (82%); 3–5 Times (10%); 5–10 Times (6%); < 10 Times (2%)

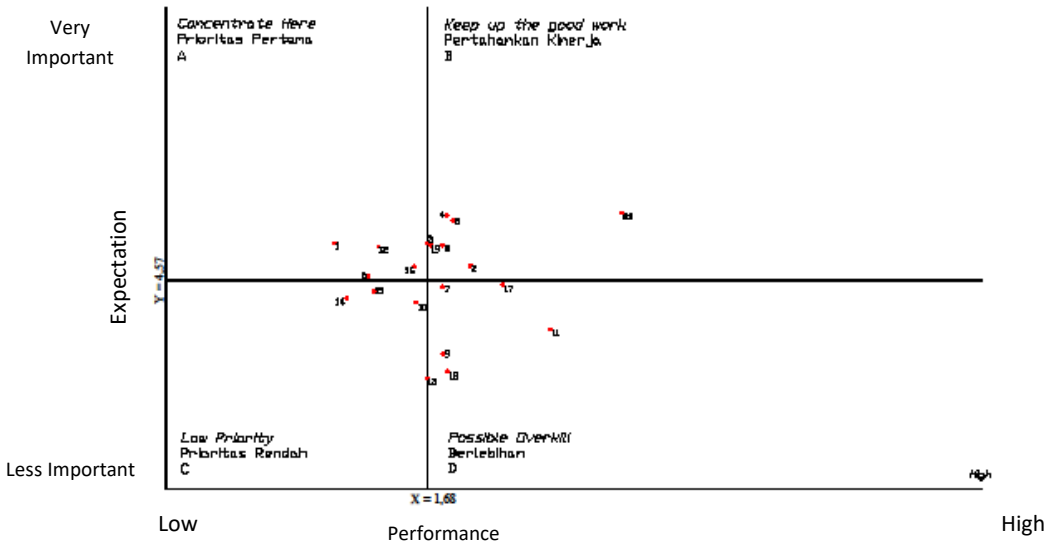
IPA Analysis

Data obtained from questionnaires related to perceptions of city transportation services were analyzed using IPAThe results of the IPA questionnaire are shown in Table 4.

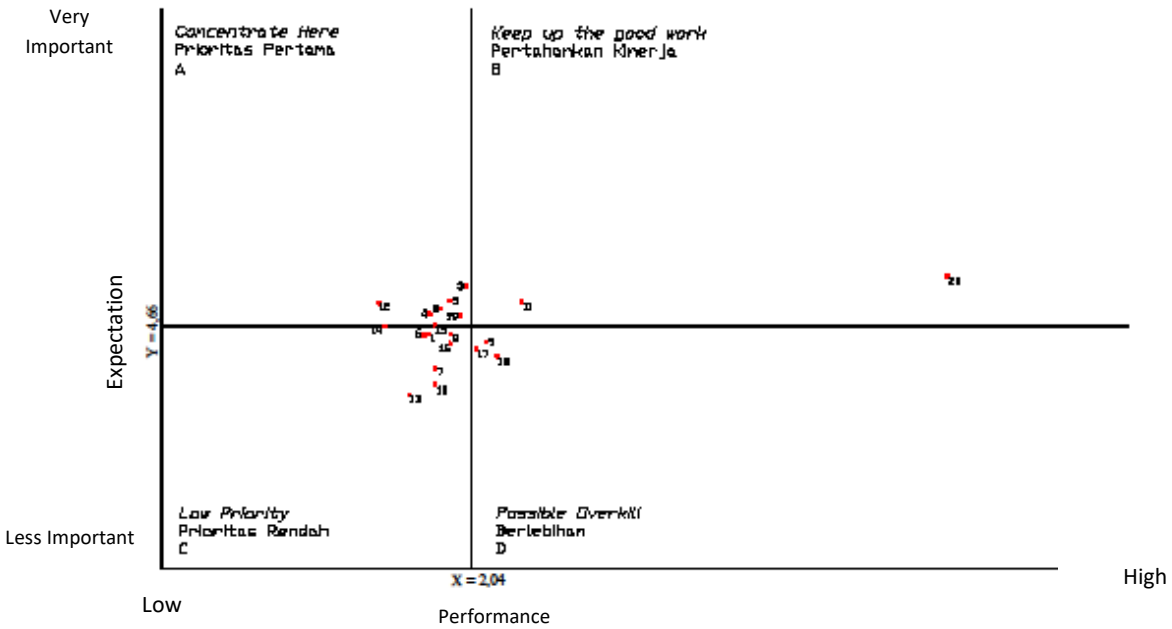
Tabel 4 Results of performance adjustment for the perspectives of Passanger of public transportation

No	Satisfaction Variable	Angkot Passanger (%)	Those who reside near routes used by Angkot (%)
1	There is not an overabundance of music playing on public transit	26.07	40.52
2	Car windows are transparent in Angkot.	39.22	42.24
3	Passengers in Angkot are protected from pickpocketing	36.05	41.91
4	There are health protocols in Angkot	36.25	40.00
5	Avoid sexual harassment	37.39	41.35
6	There is distance between seats	30.57	40.26
7	Vehicles are not allowed to pass other cars in front of them	37.44	42.22
8	Drivers do not drive angkot recklessly	36.32	40.68
9	The speed of public transportation is felt to be neither too fast nor too slow	39.17	45.65
10	Modernization of the fleet for public transit	36.89	42.60
11	The state of cleanliness in transit	43.89	46.86
12	Drivers are courteous, kind, and doesn't smoke	31.17	37.39
13	The driver is well-groomed	39.62	40.91
14	Passenger capacity does not exceed the available seats	28.76	36.48
15	Angkot implements the health protocols that have been established during the pandemic	32.44	40.77
16	There are no buskers	34.76	42.61
17	Air circulation in Angkot is sufficient	40.79	44.10
18	The walking distance to get Angkot is less than 200 m	40.85	46.12
19	Timely departure of Angkot	35.90	42.19
20	Angkot runs according to the route (Angkot Route)	53.53	79.42

It can be seen in Table 4 that the average suitability of Angkot performance to the perception of Angkot passanger is below 50%. Only 1 performance has a conformity above 50%, namely performance 20 (Transport runs according to its route and path). The average performance of public transportation according to community perception is below 50%, but only 1 performance has a conformity above 50%, namely performance 20 (transportation runs according to its route and lane). So it can be concluded that managers must pay more attention to the performance desired by Angkot passanger.



a. Angkot Passanger



b. Those who reside near routes used by Angkot

Figure 2. Cartesian Diagram of the Perception

Table 5. Comparison of Variable Positions for Each Quadrant Based on Perceptions of Angkot passanger and Communities Around Angkot Routes.

Angkot Passanger		Those who reside near routes used by Angkot	
		Quadrant 1	
1	There is not an overabundance of music playing on public transit.	3	Passengers in Angkot are protected from pickpocketing
6	There is distance between seats	4	There are health protocols in Angkot
12	Drivers are courteous, kind, and doesn't smoke	5	Avoid sexual harassment
16	There are no buskers	8	Drivers do not drive angkot recklessly
		12	Drivers are courteous, kind, and doesn't smoke
		19	Timely departure of Angkot
		Quadrant 2	
2	Car windows are transparent in Angkot	11	The state of cleanliness in transit
3	Passengers in Angkot are protected from pickpocketing	20	Angkot runs according to the route (Angkot Route)
4	There are health protocols in Angkot		
5	Avoid sexual harassment		
8	Drivers do not drive angkot recklessly		
19	Timely departure of Angkot		
20	Angkot runs according to the route (Angkot Route)		
		Quadrant 3	
10	Modernization of the fleet for public transit	1	There is not an overabundance of music playing on public transit.
14	Passenger capacity does not exceed the available seats	2	Car windows are transparent in Angkot.
15	Angkot implements the health protocols that have been established during the	6	There is distance between seats

Angkot Passanger		Those who reside near routes used by Angkot	
	pandemic		
		7	Vehicles are not allowed to pass other cars in front of them
		10	Modernization of the fleet for public transit
		13	The driver is well-groomed
		14	Passenger capacity does not exceed the available seats
		15	Angkot implements the health protocols that have been established during the pandemic
		16	There are no buskers
		Quadrant 4	
7	Vehicles are not allowed to pass other cars in front of them	9	The speed of public transportation is felt to be neither too fast nor too slow
9	The speed of public transportation is felt to be neither too fast nor too slow	17	Air circulation in Angkot is sufficient
11	The state of cleanliness in transit	18	The walking distance to get Angkot is less than 200 m
13	The driver is well-groomed		
17	Air circulation in Angkot is sufficient		
18	The walking distance to get Angkot is less than 200 m		

Figure 2 shows the criteria that passengers on angkot believe need to be addressed: 1 (There is not an overabundance of music playing on public transit), 6 (There is distance between seats), 12 (Drivers are courteous, kind, and doesn't smoke), and 16 (There are no buskers). For those who reside near urban transportation routes, there are a few variables that need to be improved: variable 3 (Passengers in Angkot are protected from pickpocketing); variable 4 (There are health protocols in Angkot); variable 5 (Avoid sexual harassment); variable 8 (Drivers do not drive angkot recklessly); variable 12 (Drivers are courteous, kind, and doesn't smoke); and variable 19 (Timely departure of Angkot). It can be seen that for angkot users the variables that need to be improved are something they feel during the trip. Meanwhile, for local people who rarely use angkot on average, the variables that need to be improved are based on the information they have obtained and based on the respondents' experience.

For the perception of angkot passengers who are Keep up the good work or quadrant B are 2 (Car windows are transparent in Angkot), 3 (Passengers in Angkot are protected from pickpocketing), 4 (There are health protocols in Angkot), 8 (Drivers do not drive angkot recklessly), 19 (Timely departure of Angkot), and 20 (Angkot runs according to the route (Angkot Route). In variables 3,4,5,8 and 19 which are considered good by angkot passanger, these variables are actually variables that must be improved according to people who live around angkot. From this gap, it can be seen that there are different perceptions between variables that need to be improved and those that are good according to urban transit passanger and the surrounding community. Variables that have been good by urban transit passanger can actually reduce the desire of the surrounding community because they are considered to need improvement.

Based on the perceptions of angkot passengers who are low priority or quadrant C are items 10 (Modernization of the fleet for public transit), 14 (Passenger capacity does not exceed the available seats), and 15 (Angkot implements the health protocols that have been established during the pandemic). According to the opinions of those who live close to Angkot's low priority routes, or quadrant C, the following items are perceived as such: (1) There is not an overabundance of music playing on public transit; (2) Car windows are transparent in Angkot; (6) There is distance between seats; (7) Vehicles are not allowed to pass other cars in front of them; (10) Modernization of the fleet for public transit; (13) The driver is well-groomed; (14) Passenger capacity does not exceed the available seats; (15) Angkot implements the health protocols that have been established during the pandemic; and (16) There are no buskers. The variables numbered 10, 14, and 15 are considered low priority by both types of responders. Community attitudes indicate that variables 1, 6, and 16 are not urgently needed to be addressed. However, city transportation passanger believe that these factors need to be improved right away.

Additionally, items 7 (Vehicles are not allowed to pass other cars in front of them), 9 (The speed of public transportation is felt to be neither too fast nor too slow), 11 (The state of cleanliness in transit), 13 (the driver wears neat clothes), 17 (Air circulation in Angkot is sufficient), and 18 (The walking distance to get Angkot is less than 200 m) relate to the perception of angkot passengers who become Excessive (Possible overkill) or quadrant D. As for the perception of those who live along the Angkot route, item 9 (The speed of public

transportation is felt to be neither too fast nor too slow), item 17 (Air circulation in Angkot is sufficient), and item 18 (The walking distance to get Angkot is less than 200 m) are considered to be in the quadrant D (possible overkill). Based on the analytical results, it is evident that three variables—variables 9, 17, and 18—are viewed by angkota users and the local population as not being particularly significant.

CONCLUSION

The level of conformity between performance and expectations for respondents of Angkot user group and the community around the city transit line shows a value below 50%. This indicates that the manager must improve the performance variables that have been provided. There are the same variables that need to be improved between the perceptions of Angkot passengers and the surrounding community, namely variable 12 (Drivers are courteous, kind, and don't smoke). Based on the results of the analysis, it can be seen that for angkot users, the variables that need to be improved are something they feel during the trip. As for the surrounding community, which on average rarely uses angkot, variables that need to be improved based on the information they have obtained and based on the experience of respondents.

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