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User Satisfaction in Jak Lingko Mikrotrans Operations

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Abstract

Mikrotrans is a means of transit that supports Transjakarta buses and serves residential neighbourhoods. However, travellers have lodged several concerns about the mikrotrans service's facilities and infrastructure. These concerns include drivers failing to stop at bus stops, drivers driving at excessive speeds, facility damage, inconvenient passenger wait periods, and a lack of bus arrival information. Aside from that, the bus stop lacks operational information, the bus stop pole is damaged, and the distance between bus stops varies. Using the customer satisfaction index approach and IPA-Kano integration, this study examines the operational performance of the Jak Lingko mikrotrans in terms of user satisfaction. The research findings revealed a 71,61% user satisfaction index in the satisfied group. However, all assessment attributes have negative gap values, resulting in a satisfaction score that fails to match user expectations. Based on the IPA-Kano integration analysis, three fatal category qualities were identified as high priority for service improvement. The fatal category attribute is that the driver drives the vehicle if the passenger is seated and/or both of the passenger's feet have touched the ground (A7), the vehicle's stopping time is adjusted to coincide with the completion of the passenger boarding and alighting process (A14), and there is signage, route information boards, the bus name, and the bus stop number (A22).

Keywords

Satisfaction index, IPA-Kano integration, mikrotrans

INTRODUCTION

Traffic congestion in Jakarta is caused by the installation of fast lanes such as intercity road infrastructure, hence people choose to drive privately. This is backed by the distance of more than 1 km between residential neighborhoods and public transport areas, as well as the poor condition of public transport [1]. As a result of the Jak Lingko program, bus stops and stations are being placed closer to residential areas. The Jak Lingko program is a public transportation service that includes integrated routes, management, and payment options. A study on the effectiveness of the Jak Lingko program at DKI Jakarta found that the number of people who use public transit increased [2].

The Jak Lingko program integrates public transportation services, including MRT, LRT, Transjakarta, KRL Commuter Line, KAI Airport, and mikrotrans. Mikrotrans is intended to support Transjakarta buses and reach residential areas that are not accessible via the main route. Mikrotrans operations are governed by the DKI Jakarta small bus category public transportation service laws. However, mikrotrans is currently receiving a high volume of public complaints. These concerns include drivers failing to stop at bus stops, driving at excessive speeds, failing to use priority seats as required, unpredictable passenger wait times, no information on bus arrivals, facilities failing to function, passenger congestion, and so on.

The only mode in the Jak Lingko program that lacks a specific lane is mikrotrans. Road traffic circumstances are factored into operational plans. However, the general public believes that mikrotrans fails to implement operational norms. According to research, numerous challenges that may prevent the implementation of basic service requirements on roads include restricted maintenance funding and a lack of competent personnel to conduct surveys and condition assessments [3]. This might also happen to Jak Lingko's mikrotrans operations.

Public concerns about bus stops include a lack of route information, damaged poles, and inconsistent distances between bus stops. As a result, the community may feel insecure and uncomfortable due to the condition of mikrotrans facilities and infrastructure. As a result, this study examines the operational performance of the Jak Lingko mikrotrans as measured by user satisfaction. A research study analyzing the integration of bus transit system services in the city of Semarang based on user satisfaction identified service features that needed to be enhanced using IPA-Kano categories [4]. Selection is based on traits with a negative gap value and the Kano category, which states that they must be one-dimensional and attractive. This study examines the satisfaction of mikrotrans users using minimum service standards from the Governor of DKI Jakarta Province Regulation No. 13 of 2019 for the category of small bus feeder transportation [5] and Technical Guidelines for TPKPU Engineering from the Decree of the Director General of Land Transportation

No. 271/HK.105/DRJD/96. The object of research is mikrotrans users spread across 84 routes throughout the DKI Jakarta area. The CSI approach will be used in this study to determine user satisfaction. Next, the IPA technique, Kano method, and IPA-Kano integration will be used to assess mikrotrans success in selecting service qualities.

distributed online so that the filled form can be printed and uploaded to the Google Form application.

A preliminary survey involving direct interviews was already done. A preliminary survey was done to determine respondents' comprehension of all service characteristics as well as the time required to complete the questionnaire. A preliminary survey was distributed to mikrotrans

Table 1 Assessment Attributes

Variable	Attribute	Symbol
Security	There is a vehicle identity sticker containing the body number, origin and destination of the route as well as a Transjakarta cooperation code that is clearly legible	A1
	There is a no-smoking sticker on the front and rear/outside of the vehicle	A2
	There is information about vehicle interference in the form of a telephone number for complaints if a passenger experiences a security disturbance	A3
	The driver wears a uniform and identifies with name, registration number and company	A4
	There is lighting in the vehicle that turns on starting at 18.00	A5
	There is a functioning CCTV and an indication sticker	A6
Safety	The driver runs the vehicle if the passenger has been seated while ascending and both passengers' feet have touched the ground while disembarking	A7
Comfort	Passenger luggage limits do not disturb other passengers, reduce carrying capacity and are not placed outside the vehicle	A8
	Cleanliness and tidiness of the vehicle by maintaining cleanliness and must be washed every day	A9
	Neatness and cleanliness of the driver by having a clean, neat appearance and wearing shoes	A10
	There are room temperature control facilities with a minimum temperature of 26°C	A11
Equality	Priority seats are available and marked with a sticker	A12
Regularity	Vehicle stopping time when there is no passenger boarding and alighting activity is a minimum of 20 seconds	A13
	Vehicle downtime, conditions adjust the process of boarding - disembarking passengers completed	A14
	Speed limit is 30 km/hour	A15
	Arrival time during peak hours is 5 minutes and off-peak hours is 10 minutes	A16
	Vehicles are available that operate during operational hours from 05.00 to 23.00	A17
	Vehicles are fit for use and do not break down	A18
	Available, functioning and applied card reader machine as a means of payment transaction and knowing the number of passengers along with the location of boarding and disembarking	A19
	Passengers are required to tap in and tap out card	A20
	Operational service time information is available via bus stop board	A21
Bus Stop	There are signs, route information boards, bus stop names and numbers	A22
	There are public telephones, rubbish bins, fences and advertising boards that do not interfere with free visibility	A23
	The distance between bus stops is 300 to 400 m	A24
	The maximum distance between a bus stop and a pedestrian crossing is 100 m	A25

RESEARCH SIGNIFICANCE

The purpose of this study is to discover how satisfied mikrotrans users are and what characteristics need to be improved. Satisfaction, expectations, and the ability of an attribute to influence satisfaction are all factors considered during analysis. The results of the satisfaction analysis and potential satisfaction providers are combined to make a conclusion on which performance aspects should be enhanced. The objective is that the outcomes of the service attribute categories will be improved, hence improving service quality and increasing public transport customers in Jakarta.

METHODOLOGY

A. DATA COLLECTION

The major source of data for this study is a questionnaire distributed to Jak Lingko mikrotrans passengers. Questionnaires were distributed at random without respect for status or strata, but they were designed for a specific goal (simple random sampling) [7]. Questionnaires are

passengers who were waiting at the top bus stop. However, because mikrotrans arrival times are unpredictable and there are no seating amenities at the bus stop, direct surveys are inefficient. As a result, another option was created in the form of offering an online questionnaire link as well as information about researchers who could be contacted if any questions were unclear.

The preliminary survey findings showed that the average time for completing questions, followed by confirmation of question items that were not understood, was roughly 30 minutes. Of the 42 questions in the preliminary survey, those that users did not understand were filtered. This item takes the shape of a fleet resting place, and not all users originate or depart from the fleet's resting place at the beginning or end of their journey. As a consequence, the obtained question qualities totaled 25 items.

The research questionnaire is divided into two sections: respondent information and service performance assessment. The performance appraisal includes questions to assess satisfaction, expectations, and responses to functional and dysfunctional conditions. Table 1 shows the

Jak Lingko mikrotrans performance assessment attributes, which are based on minimum service standards.

Determining the number of respondents was calculated based on the population size of the average monthly Jak Lingko mikrotrans users. A recapitulation of the number of passengers from January 2023 to May 2023 is presented in Table 2.

Table 2. Number of Mikrotrans Passengers in 2023 [8]

No	Month	Number of Mikrotrans Passengers
1.	January	95.906
2.	February	60.504
3.	March	84.139
4.	April	70.762
5.	May	105.416
Average		83.292

The Slovin formula was used to calculate the number of research samples. The Slovin technique is a statistical calculation of data that takes the form of a population survey [8]. The error value is set to 10%.

$$= \frac{N}{1 + (N.e^2)} \quad (1)$$

$$n = \frac{83.292}{1 + (83.292 \times 0{,}1^2)} = 99{,}88 \approx 100 \text{ respondent}$$

B. DATA ANALYSIS

Validity and reliability tests will be used to evaluate the gathered research data. Questionnaire data that pass validity and reliability tests is kept for service performance analysis.

The Customer Satisfaction Index (CSI) approach is used to calculate satisfaction levels. CSI is a quantitative examination of the percentage of users who are happy in a survey, with an emphasis on the level of satisfaction with the attributes under consideration. The mean importance score (MIS), weight factor (WF), weight score (WS), and CSI value are all used to calculate the CSI [10].

$$MIS = \frac{[\sum_{i=1}^{n} Yi]}{n} \quad (2)$$

$$WF = \frac{MIS_i}{\sum_{i=1}^{p} MIS_i} \times 100 \quad (3)$$

$$WS = WF \times MSS \quad (4)$$

$$CSI = \frac{\sum_{i=1}^{p} WS_i}{HS} \times 100\% \quad (5)$$

Note:
Yi = attribute importance value
p = importance value
MSS = mean satisfaction score
WS = weight score
HS = highest scale

Table 3. Index value and satisfaction level interpretation

No.	Nilai CSI (%)	Satisfaction Interpretation
1.	81 – 100	Very satisfied
2.	66 – 80,99	Satisfied
3.	51 – 65,99	Quite Satisfied
4.	35 – 50,99	Less Satisfied
5.	0 – 34,99	Not Satisfied

A CSI score more than 50% indicates that the service user is satisfied; a CSI value of less than 50% indicates that the service user is dissatisfied. The method of importance performance analysis (IPA) is used in performance analysis. The IPA method is an evaluation methodology that involves analyzing respondents' attitudes towards characteristics to assist in identifying attribute categories that need to be improved in quality. The IPA approach starts with determining the gap value. The gap value is calculated by subtracting the average level of satisfaction from the expected level [11].

$$Gap\ value = P - E \quad (6)$$

Note :
P = satisfaction level
E = importance level

The second step is to group mikrotrans service attributes in a Cartesian diagram and compare performance to user interests [12]. The average value of analysing the importance and performance of each attribute is calculated first before grouping them.

$$\bar{X} = \frac{\sum xi}{n} \quad (7)$$

$$\bar{Y} = \frac{\sum yi}{n} \quad (8)$$

Note :
$\bar{X}$ = average customer satisfaction level
$\bar{Y}$ = average customer expectation level
n = sample size

Following that, a map of the importance-performance places in the IPA diagram quadrants is generated. Vertical and horizontal perpendicular intersecting lines form the boundaries of this quadrant [13]. The IPA category is classified as quadrant I for quality maintenance, quadrant II for excessive category, quadrant III for low priority and quadrant IV for the highest priority for improvement.

$$\bar{\bar{X}} = \frac{\sum_{i=1}^{n} \bar{X}}{k} \quad (9)$$

$$\bar{\bar{Y}} = \frac{\sum_{i=1}^{n} \bar{Y}}{k} \quad (10)$$

Note :
$\bar{\bar{X}}$ = horizontal direction intersection value
$\bar{\bar{Y}}$ = vertical directional cut line value
k = number of scoring attributes

The Kano method is used to analyse the possibility for generating satisfaction. The potential for giving satisfaction is assessed to determine the ability of service implementation to influence service user satisfaction through assessment attributes. The Kano questionnaire model makes use of features provided in both functional and dysfunctional contexts. The Kano questionnaire model presented in Table 4.

The questionnaire model through functional statements describes user reactions in conditions where attributes are met, and vice versa for dysfunctional statements. Determining the Kano category uses the Blauth Formula. If O+A+M > I+R+ Q then O is chosen and if O+A+M < I+R+Q then the largest of I, R and Q is chosen [15]. The outputs of data processing using the IPA and Kano methodologies will be merged using the IPA-Kano

integration. The goal is to assess the degree of user expectations and use it as a guide for building services and driving improvement innovation through the identification of associated features [16]. Table 5 shows the determination categories used in the IPA-Kano integration.

Table 4. Kano model questionnaire [14]

User Needs		Dysfunctional				
		1	2	3	4	5
Functional	1	Q	A	A	A	O
	2	R	I	I	I	M
	3	R	I	I	I	M
	4	R	I	I	I	M
	5	R	R	R	R	Q

Notes:
1 = like
2 = must be
3 = neutral
4 = live with
5 = dislike
A = attractive
M = must be
O = one dimensional
I = indifferent
R = reverse
Q = questionable

Table 5. IPA-Kano integration category [17]

IPA	Kano	Category	Strategy Priorities	
			Improve	Preserve
II	Must be	Survival	-	1
I		Fatal	1	-
III		Chronic Disease	2	-
IV		Fitness	-	2
II	One dimensional	Major Weapon	-	3
I		Defenseless Strategic Point	3	-
III		Defenseless Zone	4	-
IV		Supportive Weapon	-	4
II	Attractive	Precious Treasure	-	5
I		Dusty Diamond	5	-
III		Rought Stone	6	-
IV		Beginning Jewelry	-	6

The survival category includes traits with a high level of performance and high expectations, as well as attributes that must be present. The fatal category is used for traits with low performance levels, high expectations, and contains the must-have category. The chronic disease category is utilised for traits with low levels of performance, low expectations, and is included in the must-have category. The fitness category is used for traits that have a high level of performance but modest expectations, and it contains the must be category. The main weapon category is used for traits with a high level of performance, high expectations, and are classified as one-dimensional. The defenceless strategy point category is used for traits with low levels of performance but high expectations, and it is a one-dimensional category. The defenceless zone category is reserved for traits with low performance levels, low expectations, and one-dimensional categories. The supportive weapon category is used for traits that have a high level of performance but minimal expectations and are classified as one-dimensional. The precious treasure category is utilised for traits with a high level of performance and expectations, as well as those that are attractive. The dusty diamond category is used for traits with low performance levels but high expectations, and it is included in the attractive category. The rough stone category is used for features that have low performance requirements and expectations, and it is part of the attractive category. The beginning jewellery category is used for features that have a high level of performance, minimal expectations, and are classified as attractive. The elimination category is used for attributes that need to be analyzed further, such as if the user understands the role of the service attribute.

Decisions are made based on priority numbers from the improvement strategy. The deadly category, which represents the first improvement approach priority, indicates that the reviewed attribute generates a high amount of user discontent. If service quality influences user attraction, then the deadly category will indicate the possibility of losing users.

RESULTS AND DISCUSSIONS

A recapitulation of the characteristics of respondents in this study is presented in Table 6.

For reliability testing, Cronbach's Alpha is used, the coefficient must be greater than 0,6 [18]. The results of the reliability test with the help of Microsoft Excel can be seen in Table 8.

Questionnaires that have been confirmed valid and reliable will be analyzed throughout data processing. The first analysis used the CSI approach to evaluate the relevance of mikrotrans service features. Table 9 displays the results of estimating the satisfaction level for the Jak Lingko mikrotrans.

Table 9 displays a CSI value of 71,61% in the "satisfied" category, which falls between 66 and 80,99%. This demonstrates that the responders' passengers are pleased with the performance of the Jak Lingko mikrotrans service. The IPA approach was used to further analyze the relationship between performance and individual interests. The study begins with determining the value of the gap between satisfaction and expectations. Table 10 shows the results of the gap value calculations.

The gap value computation reveals that all assessment attributes have a negative value. This suggests that mikrotrans consumers are less satisfied than they are expected to be. Furthermore, in the Cartesian diagram, attribute categories are classified based on the average value of performance and expectations. In the IPA diagram, the x-axis indicates expectations and the y-axis represents satisfaction. Figure 1 displays the calculated findings.

Table 6. Characteristics respondents

No.	Characteristics	Information	Percentage (%)
1.	Gender	Woman	71
		Man	29
2.	Age	< 17 years	2
		17 – 25 years	51
		26 – 35 years	38
		36 – 45 years	5
		> 45 years	4
3.	Address	DKI Jakarta	84
		Tangerang	10
		Bogor	1
		Bekasi	4
		Depok	1
4.	Work	Student	22
		Civil Servant	1
		Privat Employed	64
		Self Employed	5
		Others	8
5.	Revenue per month (IDR)	< 1.000.000	19
		1.000.000 – 2.000.000	2
		2.000.000 – 3.000.000	9
		3.000.000 – 4.000.000	12
		4.000.000 – 5.000.000	10
		> 5.000.000	48
6.	Travel Frequency	< 3 times	35
		3 – 5 times	29
		> 5 times	36

Mikrotrans service attributes in quadrant I must be maintained because they have been met in the satisfied category based on user desires. This characteristic demands managers to verify that service performance can continue to be maintained. Quadrant I obtained 13 attributes, namely there is a vehicle identity sticker containing the body number, origin and destination of the route as well as a Transjakarta cooperation code that is clearly legible (A1), there is a no-smoking sticker on the front and rear/outside of the vehicle (A2), there is information about vehicle interference in the form of a telephone number for complaints if a passenger experiences a security disturbance (A3), the driver wears a uniform and identifies with name, registration number and company (A4), there is lighting in the vehicle that turns on starting at 18.00 (A5), there is a functioning CCTV and an indication sticker (A6), passenger luggage limits do not disturb other passengers, reduce carrying capacity and are not placed outside the vehicle (A8), cleanliness and tidiness of the vehicle by maintaining cleanliness and must be washed every day (A9), neatness and cleanliness of the driver by having a clean,

Table 7. Mikrotrans service validity test results

	IPA		Kano		r table	Result
	r value					
	P	G	F	D		
A1	0,700	0,633	0,702	0,785	0,195	Valid
A2	0,595	0,723	0,593	0,789	0,195	Valid
A3	0,690	0,658	0,691	0,826	0,195	Valid
A4	0,695	0,711	0,695	0,890	0,195	Valid
A5	0,676	0,774	0,674	0,814	0,195	Valid
A6	0,746	0,853	0,744	0,929	0,195	Valid
A7	0,714	0,748	0,715	0,982	0,195	Valid
A8	0,690	0,734	0,691	0,855	0,195	Valid
A9	0,770	0,800	0,771	0,884	0,195	Valid
A10	0,764	0,671	0,766	0,828	0,195	Valid
A11	0,717	0,621	0,717	0,692	0,195	Valid
A12	0,671	0,687	0,672	0,822	0,195	Valid
A13	0,669	0,630	0,670	0,722	0,195	Valid
A14	0,732	0,798	0,733	0,827	0,195	Valid
A15	0,620	0,575	0,621	0,630	0,195	Valid
A16	0,617	0,662	0,617	0,779	0,195	Valid
A17	0,625	0,810	0,623	0,881	0,195	Valid
A18	0,666	0,709	0,666	0,870	0,195	Valid
A19	0,725	0,749	0,724	0,825	0,195	Valid
A20	0,533	0,607	0,532	0,789	0,195	Valid
A21	0,739	0,773	0,755	0,828	0,195	Valid
A22	0,688	0,703	0,687	0,872	0,195	Valid
A23	0,684	0,622	0,682	0,675	0,195	Valid
A24	0,683	0,727	0,682	0,738	0,195	Valid
A25	0,652	0,573	0,653	0,739	0,195	Valid

Note :
F = functional question
D = dysfunctional question

Table 8. Mikrotrans service reliability test results

	IPA		Kano	
	Variant P	Variant G	Variant F	Variant D
A1	1,252	0,811	1,252	1,751
A2	1,101	0,703	1,101	1,759
A3	1,427	0,828	1,427	1,455
A4	1,029	0,541	1,029	1,794
A5	0,957	0,749	0,957	1,739
A6	1,220	0,712	1,220	1,932
A7	1,693	1,058	1,693	1,698
A8	1,395	0,818	1,395	1,677
A9	1,152	0,750	1,152	1,528
A10	1,361	0,761	1,361	1,524
A11	1,925	1,358	1,925	1,314
A12	1,329	0,801	1,329	1,765
A13	1,913	1,347	1,913	1,719
A14	1,955	1,036	1,955	1,495
A15	1,495	1,495	1,495	1,723
A16	1,798	1,330	1,798	1,321
A17	1,488	0,990	1,488	1,614
A18	1,218	0,923	1,218	1,853
A19	1,462	1,177	1,462	1,515
A20	1,334	1,032	1,334	1,966
A21	2,162	0,997	2,161	1,574
A22	1,842	0,800	1,842	1,929
A23	1,637	1,271	1,637	1,755
A24	1,425	1,258	1,425	1,798
A25	1,364	1,085	1,364	1,795
Sum	36,929	24,632	36,929	41,993
Total Varians^2	426,424	295,159	427,473	683,117
Reliability coefficient	**0,951**	**0,955**	**0,952**	**0,978**

neat appearance and wearing shoes (A10), priority seats are available and marked with a sticker (A12), vehicles are available that operate during operational hours from 05.00 to 23.00 (A17), vehicles are fit for use and do not break down (A18) and passengers are required to tap in and tap out card (A20).

Table 9. Customer satisfaction index

	Xi	Yi	MIS	WF	MSS	WS
A1	398	424	4,24	4,19	3,98	16,67
A2	410	438	4,38	4,33	4,10	17,74
A3	374	420	4,20	4,15	3,74	15,51
A4	404	438	4,38	4,33	4,04	17,48
A5	405	428	4,28	4,23	4,05	17,12
A6	395	434	4,34	4,29	3,95	16,93
A7	338	415	4,15	4,10	3,38	13,85
A8	367	410	4,10	4,05	3,67	14,86
A9	380	424	4,24	4,19	3,80	15,91
A10	365	408	4,08	4,03	3,65	14,71
A11	288	366	3,66	3,61	2,88	10,41
A12	362	413	4,13	4,08	3,62	14,77
A13	292	369	3,69	3,64	2,92	10,64
A14	338	412	4,12	4,07	3,38	13,75
A15	298	340	3,40	3,36	2,98	10,01
A16	302	377	3,77	3,72	3,02	11,24
A17	387	414	4,14	4,09	3,87	15,82
A18	412	431	4,31	4,26	4,12	17,54
A19	355	407	4,07	4,02	3,55	14,27
A20	386	409	4,09	4,04	3,86	15,59
A21	300	405	4,05	4,00	3,00	12,00
A22	342	422	4,22	4,17	3,42	14,25
A23	314	361	3,61	3,57	3,14	11,20
A24	336	379	3,79	3,74	3,36	12,58
A25	350	381	3,81	3,76	3,50	13,17
Sum	8898	10125	101,3		358,0	
Customer Satisfaction Index (CSI) = ∑WS/5						71,61

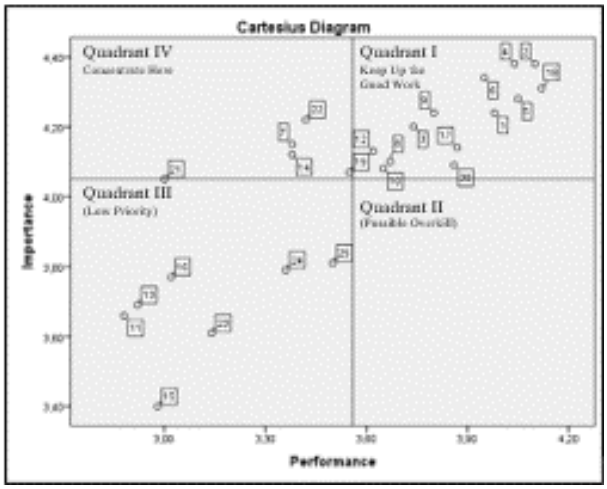

Figure 1. Cartesius diagram of Mikrotrans Jak Lingko

Mikrotrans service attributes in quadrant III have poor or inadequate real service performance but are also viewed as unimportant by users. Quadrant III features imply that management does not need to prioritise or focus too much on these service attributes. Quadrant III consists of 7 attributes, namely there are room temperature control facilities with a minimum temperature of 26°C (A11), vehicle stopping time when there is no passenger boarding and alighting activity is a minimum of 20 seconds (A13), speed limit is 30 km/hour (A15), arrival time during peak hours is 5 minutes and off-peak hours is 10 minutes (A16), there are public telephones, rubbish bins, fences and advertising boards that do not interfere with free visibility (A23), the distance between bus stops is 300 to 400 m (A24) and the maximum distance between a bus stop and a pedestrian crossing is 100 m (A25).

Table 10. Gap of satisfaction and expectation level

	Average Satisfaction Score	Average Expectation Score	*Gap*
A1	3,98	4,24	-0,26
A2	4,10	4,38	-0,28
A3	3,74	4,20	-0,46
A4	4,04	4,38	-0,34
A5	4,05	4,28	-0,23
A6	3,95	4,34	-0,39
A7	3,38	4,15	-0,77
A8	3,67	4,10	-0,43
A9	3,80	4,24	-0,44
A10	3,65	4,08	-0,43
A11	2,88	3,66	-0,78
A12	3,62	4,13	-0,51
A13	2,92	3,69	-0,77
A14	3,38	4,12	-0,74
A15	2,98	3,40	-0,42
A16	3,02	3,77	-0,75
A17	3,87	4,14	-0,27
A18	4,12	4,31	-0,19
A19	3,55	4,07	-0,52
A20	3,86	4,09	-0,23
A21	3,00	4,05	-1,05
A22	3,42	4,22	-0,80
A23	3,14	3,61	-0,47
A24	3,36	3,79	-0,43
A25	3,50	3,81	-0,31
Sum	88,98	101,25	
Average	3,56	4,05	

Quadrant IV attributes are important factors that mikrotrans users expect but actual performance is not yet satisfactory. Quadrant IV consists of 5 attributes, namely the driver drives the vehicle if the passenger is seated when boarding and both of the passenger's feet have touched the ground when getting off (A7), the vehicle's stopping time, the conditions for adjusting the passenger boarding and alighting process are complete (A14), available, functioning and implemented card reader machine as a means of payment transactions and knowing the number of passengers along with their boarding and alighting locations (A19), information on operational service times is available via the bus stop board (A21) and there are directional signs, route information boards, bus stop names and numbers (A22).

The Kano technique is used to analyse the potential attributes that influence consumer happiness. The Kano categories, which are A, O, M, I, R, and Q, are formed by classifying the results of functional and dysfunctional questions. Table 11 displays the results for the Jak Lingko mikrotrans Kano category.

Table 11. Kano's Category

	Kano classification						A + O + M	R + R + Q	Kano
	A	O	M	I	R	Q			
A1	9	27	35	19	3	7	71	29	M
A2	6	35	32	19	2	6	73	27	O
A3	7	21	36	25	2	9	64	36	M
A4	12	19	39	21	0	9	70	30	M
A5	10	28	33	22	2	5	71	29	M
A6	6	28	37	17	5	7	71	29	M
A7	8	12	42	20	4	14	62	38	M
A8	10	13	29	35	5	8	52	48	M
A9	9	16	42	25	2	6	67	33	M
A10	15	12	33	29	5	6	60	40	M
A11	13	5	20	38	8	16	38	62	I
A12	12	12	30	33	5	8	54	46	M
A13	8	3	21	38	11	19	32	68	I
A14	8	14	30	26	6	16	52	48	M
A15	8	3	25	44	7	13	36	64	I
A16	7	10	25	36	6	16	42	58	I
A17	11	26	29	23	4	7	66	34	M
A18	10	33	32	13	4	8	75	25	M
A19	11	12	36	30	4	7	59	41	M
A20	11	19	23	33	4	10	53	47	M
A21	7	12	24	27	8	22	43	57	I
A22	7	14	35	25	4	15	56	44	M
A23	7	8	24	41	11	9	39	61	I
A24	6	11	20	44	11	8	37	63	I
A25	5	11	29	38	5	12	45	55	I

Kano's investigation revealed that 17 service qualities have the potential to improve user satisfaction. These qualities are divided into 16 M (must be) categories, which include A1, A3, A4, A5, A6, A7, A8, A9, A10, A12, A14, A17, A18, A19, A20, and A22. The must be category includes service attributes that, according to user views, must exist or be offered by the organizer. for other qualities in the O (one-dimensional) category, specifically A2. According to the one-dimensional category, these attributes determine total performance levels. However, a drop in one-dimensional category attribute performance will have an impact on user happiness.

The IPA-Kano integration will be performed to overcome analytical category flaws and determine which components of the IPA method results require prioritization and which elements of the Kano method results require improvement. The IPA-Kano integration will provide appropriate and strong strategic judgements to avoid making wrong decisions. The results of the IPA-Kano integration in the Jak Lingko mikrotrans performance analysis are shown in Table 12.

The IPA-Kano integration yielded three features that needed to be addressed in the deadly category. The deadly category demonstrates how mikrotrans service qualities can result in large degrees of discontent. This trait falls under the topic of low satisfaction but great aspirations. Attributes in the fatal category include the driver running the vehicle if the passenger is sitting when boarding and both of the passenger's feet have touched the ground when getting off (A7), the vehicle's stopping time, conditions for adjusting the process of boarding and disembarking passengers, is complete (A14), and the availability of

Table 12. Results of IPA-Kano Integration

Attribute	Hasil IPA	KANO	IPA-KANO integration		
			IPA-KANO	Increase	Preserve
A1	Keep Up The Good Work (II)	M	Survival	-	1
A2	Keep Up The Good Work (II)	Or	Major Weapon	-	3
A3	Keep Up The Good Work (II)	M	Survival	-	1
A4	Keep Up The Good Work (II)	M	Survival	-	1
A5	Keep Up The Good Work (II)	M	Survival	-	1
A6	Keep Up The Good Work (II)	M	Survival	-	1
A7	Concentrate Here (I)	M	Fatal	1	-
A8	Keep Up The Good Work (II)	M	Survival	-	1
A9	Keep Up The Good Work (II)	M	Survival	-	1
A10	Keep Up The Good Work (II)	M	Survival	-	1
A11	Low Priority (III)	I	Elimination	-	-
A12	Keep Up The Good Work (II)	M	Survival	-	1
A13	Low Priority (III)	I	Elimination	-	-
A14	Concentrate Here (I)	M	Fatal	1	-
A15	Low Priority (III)	I	Elimination	-	-
A16	Low Priority (III)	I	Elimination	-	-
A17	Keep Up The Good Work (II)	M	Survival	-	1
A18	Keep Up The Good Work (II)	M	Survival	-	1
A19	Keep Up The Good Work (II)	M	Survival	-	1
A20	Keep Up The Good Work (II)	M	Survival	-	1
A21	Concentrate Here (I)	I	Elimination	-	-
A22	Concentrate Here (I)	M	Fatal	1	-
A23	Low Priority (III)	I	Elimination	-	-
A24	Low Priority (III)	I	Elimination	-	-
A25	Low Priority (III)	I	Elimination	-	-

signage, information boards route, name, and bus stop number (A22).

CONCLUSIONS

The overall mikrotrans service satisfaction index level in the satisfied category is 71.61%. However, all qualities have a negative gap value, indicating that while service consumers are satisfied with mikrotrans services, their contentment does not meet the intended level of anticipation.

Based on the IPA-Kano integration analysis, three attributes were obtained with a low level of satisfaction, high expectations and whose existence was considered important, thirteen attributes that had great potential for user dissatisfaction with relatively high performance and expectations, 1 attribute that became the identity of the organizer towards competitors and 8 attributes which requires further analysis to find out whether the user has understood or the user has understood and is deemed unnecessary.

The IPA-Kano integration results show three service attributes that can cause high driver dissatisfaction when driving a vehicle if the passenger is sitting when boarding and both feet have touched the ground when getting off (A7), the vehicle downtime conditions when adjusting the passenger boarding and alighting process are complete (A14), and there are directional signs, route information boards, bus stop names and numbers (A22).

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