
Study of Minimum Service Standard Index in Public Transportation: Sample of Trans Pakuan Bogor

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ABSTRACT

Public transportation in Bogor City is one of the issues that is still a concern and needs to be studied. Urban transportation management involves many strategic aspects and issues, such as reducing gas emissions, multimodal integration, and increasing public awareness and convenience to change the habits for using mass transportation. Buy the service program from BPTJ Ministry of Transportation through Trans Pakuan has been operating since November 2021 and during the operational period studies are still needed to achieve and improve service standards. This study uses field survey methods and quantitative analysis of the 8 dimensions of minimum service standards for mass transportation. The result shows that the Public Perception Service Index (Trans-Pakuan) shows "good" conditions in each corridor. However, the Trans Pakuan operation is considered ineffective because the loading factor is dominated by students, not workers. There are still 61.6% distance from bus stops above 1 kilometer with travel time to the bus stop taking more than 10 minutes by 56.9%. Trans-Pakuan BTS users are expected to be shifted to communities with a higher economic level by conducting in-depth studies to find out the expectations of public transport standards desired by middle income to higher income.

Keywords: Buy the Service, Minimum Service Standard, Public Transportation, Trans Pakuan.

INTRODUCTION

Since November 2021 the Jabodetabek Transportation Management Agency (BPTJ) Ministry of Transportation in collaboration with the Bogor City Government launched the Bus Kita Trans Pakuan transportation service or better known as Trans Pakuan. At the beginning of the Trans Pakuan operations, there was no payment for passengers. However, starting in May 2023, Trans Pakuan operations have implemented tariffs for their passengers. The presence of Trans Pakuan aims to change people's habits in using private vehicles (motorcycles and cars) towards mass transportation. As the results of the analysis released by the Global Traffic Scorecard for 2021, Bogor is listed as the fifth city in Indonesia with a level of congestion. However, public transportation services should be a necessity, especially with the implementation of the government's Buy the Service scheme. Trans Pakuan services need to be deepened into the characteristics of their users because

with the goal of shifting the trend of people becoming users of mass transportation, it is necessary to adjust service standards from existing operations to suit user needs. Trans Pakuan is expected to be able to become integrated transportation because most of the people of Bogor are workers in Jakarta. Trans Pakuan must be accessible, efficient, economical, able to reach connecting routes to LRT, MRT, KRL, or other strategic transportation mode shift points. The formulation for improving public transport service in Bogor requires an initial study of the public perception index of Trans Pakuan service standards.

1. Transport Management through Buy the Service

Transportation management is a responsive system of governance, regulation, and the process of how the activities of transportation, mobilization, and movement of goods and people can be carried out effectively, efficiently, and



properly. In this case, the management of urban mass transportation plays an important role in responding to issues and challenges to several problems. First, good transportation management is enabling to reduce and overcome the level of road congestion in urban areas in line with reducing gas emissions. Second, reliable mass transportation can increase people's trust in using it because users feel that mass transportation provides security, safety, comfort, and punctuality. Third, transportation management needs to pay attention to the affordability of boarding points and destination routes, so that it requires the role, coordination, and cooperation of various lines, both the central government, local governments, NGOs and the community. Fourth, the management of urban mass transportation is currently demanded to be integrated, especially in terms of costs and intermodal transfers/switch. The push and pull strategy in business management should also be applied to the transportation sector. In the government's push strategy, in this case, the Ministry of Transportation has a duty to encourage people to use mass transportation through socialization, provision of fleets, operational subsidies, promotions through temporary service fee exemptions. The push strategy is also enhanced by issuing policies to "force" people to switch for using public transportation. One of the push strategy is through Buy the Service (BTS) scheme. BTS is the scheme for purchasing public transportation services and subsidies by the government, Ministry of Transportation, in terms of procurement, operations, fleet and driver management, fares and routes in collaboration with City and/or Provincial Governments. Some of the cities targeted by the BTS program include Medan, Denpasar, Solo, Yogyakarta, Palembang, Makassar, followed by Bandung and Bogor. The government should monitor and evaluate the operation of the

transportation fleet so that they are standardized in accordance with the Minister of Transportation Regulation Number 98/2013.

Supported by a pull strategy by increasing the attractiveness of the fleet and the services provided to increase public confidence to switch to mass transportation. For this reason, in this study the authors tried to analyze the community's assessment of the dimensions of minimum service standards for public transportation with the BTS scheme for the sample in Trans Pakuan Bogor. The minimum service standard index set by the government is listed in article 2 paragraph 2 PM No.98/2013 covering safety, security, accessibility, comfort, equality and regularity. Nowadays, by the technological developments, cashless payment trends, as well as user demands for public transportation to be able to reach strategic locations for workplaces, tourist attractions, parking areas, and transit stops, the authors add 2 dimensions referring to previous research that minimum service standards must cover connectivity aspects between fashion and digitization (Febrina, 2023).

2. Transportation Condition in Bogor City

Bogor City is one of the suburban areas of the State Capital Jakarta and is part of the Greater Jakarta Megapolitan City (Jabodetabek). Bogor is located on the southern side from Jakarta 50 kilometers away with a city area of 118.5 km² and has 6 administrative areas (Kota Bogor Dalam Angka, 2022). In 2021 the population increase by 0.9% to 1,052,359 people. An increase in population will certainly be in line with an increase in the number of needs for health facilities and facilities, housing, employment, and transportation connectivity. In general, the population in Bogor is dominated by women than men, this can also be seen in the results of this survey where most of the respondents who use Trans Pakuan are



women. According to data from the Central Bureau of Statistics for the City of Bogor, the total workforce in Bogor in 2021 was recorded at 856,469. The working force is 88.2% with a male workforce of 63.8% and 36.2% female. The size of the workforce also needs to be a concern in preparing mass transportation. The routine mobility of the workforce is the movement from their place of residence to the location of work and vice versa. So that in a linear way the need for facilities, infrastructure and public transportation fleets also increases the need to accommodate the mobility of the work force. With the City Minimum Wage (UMK) for Bogor City in 2022 worth Rp. 4,330,250,-, even so, the average income of many people is still below the UMK. This can be an analysis of Trans Pakuan user data about the

community's needs for the availability of cheap modes of transportation and whether the Trans Pakuan BTS scheme has been able to answer them.

Trans Pakuan operates on 4 of the 6 designated corridors. The corridors that have been operating to date are Corridor 1, Corridor 2, Corridor 5, and Corridor 6. Data obtained from the Bogor City Transportation Agency in July-September 2022, the operational load factor for Trans Pakuan is categorized as quite high with an average total passenger above 100,000. From these initial data it can be seen that the implementation of Trans Pakuan has great potential to divert private cars and motorists to mass transportation.

No.	Kode Trayek	Trayek	Rute / Lintasan Trayek		Panjang Rute (Km)
			Berangkat	Pulang	
1	TPK-1	Terminal Bubulak – Cidangiang	Terminal Bubulak - Jl. KH. Abdullah Bin Nuh - Jl. Sholeh Iskandar - Jl. KS Tubun - Jl. Raya Pajajaran - Baranangsiang (Transfer Point Cidangiang)	Cidangiang - Jl. Cikabuyutan - U Turn Tol Jagorawi - Jl. Raya Pajajaran - Jl. Otto Iskandardinata - Jl. Ir. H. Juanda - Jl. Jalak Harupat - Jl. Salak - Jl. Raya Pajajaran - Jl. KS Tubun - Jl. Sholeh Iskandar - Jl. KH. Abdullah Bin Nuh - Terminal Bubulak	27,4
2	TPK-2	Terminal Bubulak (via. Cidangiang) - Ciawi	Terminal Bubulak - Jl. KH. Abdullah Bin Nuh - Jl. Letjen Ibrahim Adjie - Jl. Raya Gunung Batu - Jl. Veteran - Jl. Perintis Kemerdekaan - Jl. Gatot Subroto - Jl. Merdeka - Jl. Kapten Muslihat - Jl. Ir. H. Juanda - Jl. Jalak Harupat - Jl. Raya Pajajaran - Baranangsiang (Cidangiang) - Jl. Cikabuyutan - U Turn Tol Jagorawi - Jl. Raya Pajajaran - Jl. Raya Tajur - Ciawi	Ciawi - Jl. Raya Tajur - Jl. Raya Pajajaran - Jl. Otto Iskandardinata - Jl. Ir. H. Juanda - Jl. Kapten Muslihat - Jl. Veteran - Jl. Raya Gunung Batu - Jl. Letjen Ibrahim Adjie - Jl. KH. Abdullah Bin Nuh - Terminal Bubulak	34,4
3	TPK-3	Terminal Bubulak (via. Suryakencana) - Sukasari	Terminal Bubulak - Jl. KH. Abdullah Bin Nuh - Jl. Letjen Ibrahim Adjie - Jl. Raya Gunung Batu - Jl. Veteran - Jl. Perintis Kemerdekaan - Jl. Gatot Subroto - Jl. Merdeka - Jl. Kapten Muslihat - Jl. Ir. H. Juanda - Jl. Jalak Harupat - Jl. Raya Pajajaran - Jl. Otto Iskandardinata - Jl. Suryakencana - Jl. Siliwangi - Jl. Raya Pajajaran - Sukasari	Sukasari - Jl. Raya Pajajaran - Jl. Siliwangi - Jl. Lawangjintung - Jl. Batutulis - Jl. Pahlawan - Jl. R. Shaleh Syarif Bustaman (Empang) - Jl. Ir. H. Juanda - Jl. Kapten Muslihat - Jl. Veteran - Jl. Raya Gunung Batu - Jl. Letjen Ibrahim Adjie - Jl. KH. Abdullah Bin Nuh - Terminal Bubulak	25,4
4	TPK-4	Ciawi – Ciparigi	Ciawi - Jl. Raya Tajur - Jl. Raya Pajajaran - Jl. Otto Iskandardinata - Jl. Ir. H. Juanda - Jl. Jalak Harupat - Jl. Salak - Jl. Raya Pajajaran - Jl. KS Tubun - U Turn Sholeh Iskandar - Jl. Raya Bogor - Jl. Mandala (Pomad) - Jl. Mandala II - Jl. Villa Bogor Indah - Ciparigi	Ciparigi - Jl. Villa Bogor Indah - Jl. Mandala II - Jl. Mandala (Pomad) - Jl. Raya Bogor - Jl. KS. Tubun - Jl. Raya Pajajaran - Cidangiang - Jl. Cikabuyutan - U Turn Tol Jagorawi - Jl. Raya Pajajaran - Jl. Raya Tajur - Ciawi	36,0
5	TPK-5	Ciparigi – Stasiun KA. Bogor	Ciparigi - Jl. Villa Bogor Indah - Jl. Raya Penda - Jl. Kedung Halang - Jl. Raya Bogor - Jl. KS. Tubun - Jl. Ahmad Yani - Jl. RE. Martadinata - Jl. Merdeka - Jl. M. A. Saimun - Jl. Mayor Oking - Stasiun KA. Bogor	Stasiun KA. Bogor - Jl. Mayor Oking - Jl. Kapten Muslihat - Jl. Ir. H. Juanda - Jl. Jend. Sudirman - Jl. Pemuda - Jl. Dadali - Jl. Ahmad Yani - Jl. KS. Tubun - U Turn Jl. Sholeh Iskandar - Jl. Raya Bogor - Jl. Kedung Halang - Jl. Raya Penda - Jl. Villa Bogor Indah - Ciparigi	17,8
6	TPK-6	Parung Banteng - Air Mancur Bogor	Parung Banteng - Jl. Kol. Ahmad Syam - Jl. Achmad Adnawijaya - Jl. A. Yani - Air Mancur Bogor	Air Mancur Bogor - Jl. Pemuda - Jl. Dadali - Jl. Ahmad Yani - Jl. Achmad Adnawijaya - Jl. Kol. Achmad Syam - Parung Banteng	19,1

Picture 1. The Trans Pakuan Route

KORIDOR	1 BULAN (1 - 31 JULI)		1 BULAN (1 - 31 AGUSTUS 2022)		1 - 20 SEPTEMBER 2022	
	JUMLAH PENUMPANG	LOAD FACTOR	JUMLAH PENUMPANG	LOAD FACTOR	JUMLAH PENUMPANG	LOAD FACTOR
Kor 1	127.606	99,00%	147.366	113,30%	105.641	126,16%
Kor 2	174.214	149,25%	190.590	161,07%	140.047	183,77%
Kor 5	115.137	86,42%	121.222	91,74%	85.965	105,62%
Kor 6	57.514	43,31%	61.017	46,83%	39.172	58,13%

ce: Keputusan Kepala Dinas Perhubungan Kota Bogor Nomor : 551.21/836.B–Dishub

Picture 2. Trans Pakuan Load Factor Juli-September 2021

Source: Dinas Perhubungan Kota Bogor

METHOD

The method used in this research is quantitative analysis by distributing questionnaires to respondents who are Trans Pakuan users/passengers. Before the questionnaire was distributed, the researcher

conducted a pretest on 30 respondents to test the normal distribution (Sugiono, 2009). The pretest was held on 16-18 November 2022. Data processing is used IBM SPSS 26 and produced acceptable reliability and validity values with Pearson sig values. <0.05 and Cronbach's Alpha >0.60. The question items in



the questionnaire refer to the 8 standard dimensions of mass transit services (Febrina, 2023; Stojic, et.al, 2011; Randheer, 2011) also the questions are arranged according to the socio-economic conditions of the Bogor citizen and the situation in the field during preliminary observations. The minimum sample of respondents is determined through several considerations, including time of data collection (one week from 21-27 November 2022), average passenger load factor, and the tolerated margin of error (in this survey the tolerated margin of error is 5%). The minimum number of samples is calculated by Slovin with an average load factor of 106,782 passengers, so a minimum sample of 398 respondents is obtained. During the data collection period, a total of 589 respondents filled out the questionnaire in full context.

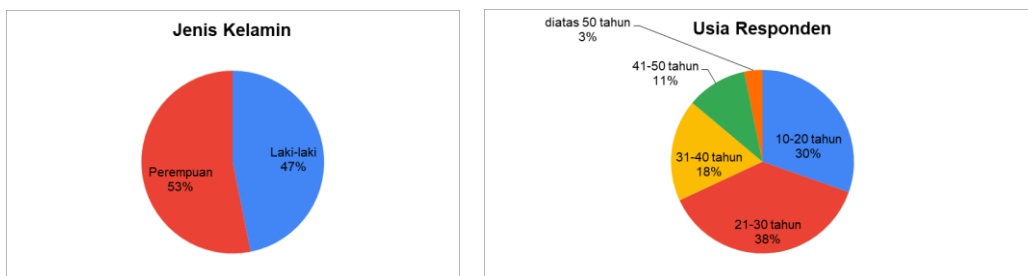
To assess the minimum service standard index is done by analyzing the average value of respondents' answers and categorization. The Likert scale used in research is seen as an ordinal scale. When a study views the Likert

scale used in collecting respondent data as an ordinal scale, the statistical method used in subsequent analysis is non-parametric statistics which is widely used in social research where the results of the analysis are in the form of categorization or ranking. The categorization of the results of the respondents' answers is intended to facilitate the analysis and grouping of the perceptions of the answers. refers to the categorization formula of Azwar (2013) using the theoretical average μ value and σ standard deviation. The following is the categorization used in this study:

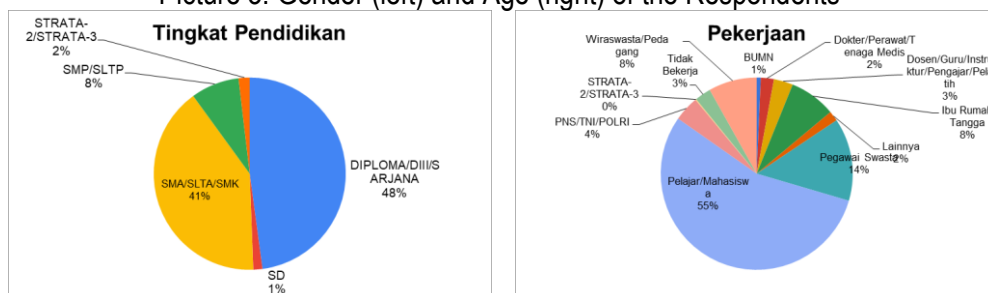
1. Low $x < (\mu - 1,0 \sigma)$
2. Moderate $(\mu - 1,0 \sigma) \leq x < (\mu + 1,0 \sigma)$
3. High $(\mu + 1,0 \sigma) \leq x$

RESULT and DICUSSION

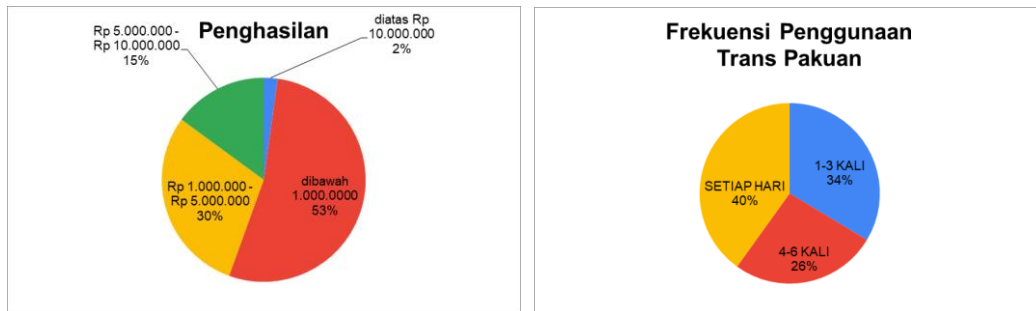
In general, the instrument is divided into two parts. The first part is a general question to photograph the demographics of respondents and the second part is a question regarding the perception of service standards. Below is the profile of the survey respondents.



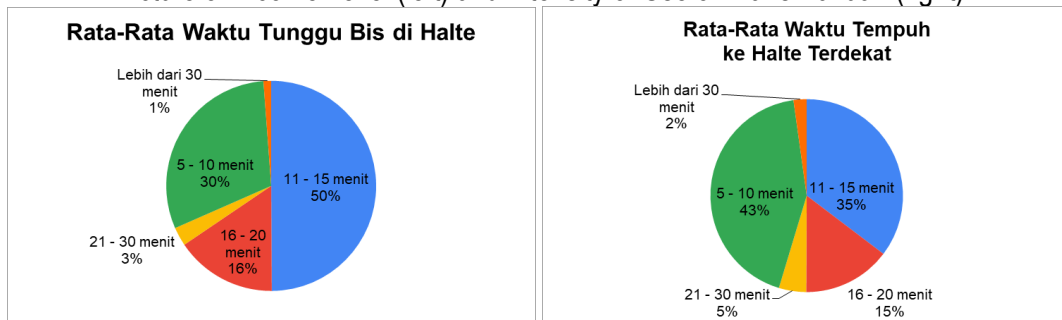
Picture 3. Gender (left) and Age (right) of the Respondents



Picture 4. Level of Education (left) and Occupation (right) of the Respondents



Picture 5. Income Level (left) and Intensity of Use of Trans Pakuan (right)



Picture 6. The Average Bus Waiting Time (left) and Travel time to the Nearest Bus Stop (right)

Trans-Pakuan users are dominated by female (53.1%), aged 20-30 years (37.7%), education level D3/S1 (47.9%), student (55.2%), income level below 1 million (53.3%), as regular daily Trans Pakuan users (40.1%), waiting time at bus stops for 11-15 minutes (49.9%), travel time to the bus stop is 5-10 minutes (43.1%), mostly the distance to the bus stop is less than 1 kilometer. We found that users do not have an application BisKITA (56.0%) and have never accessed the application (53.5%). The average user is still very conventional in terms of technological skills or existing applications that have not

been socialized or do not yet have added value to services or trips from Trans Pakuan. The use of applications in transportation is expected not only to provide information to customers regarding routes, schedules/routes, or other basic information but also to make it easier for customers to make payments or connect with other modes of transportation (connectivity value) as well as cooperation for payment bonuses, discounts, and customer loyalty. This has yet to be fully touched because the implementation of Trans Pakuan has so far not been paid for (when this study conducted Trans Pakuan was free of charge).



Picture 7. BisKita App Ownership (left) and BisKita App Access Frequency (right)

Overall digitization is good, but it can be said to be low among the other averages in all 8 dimensions because it corresponds to usage

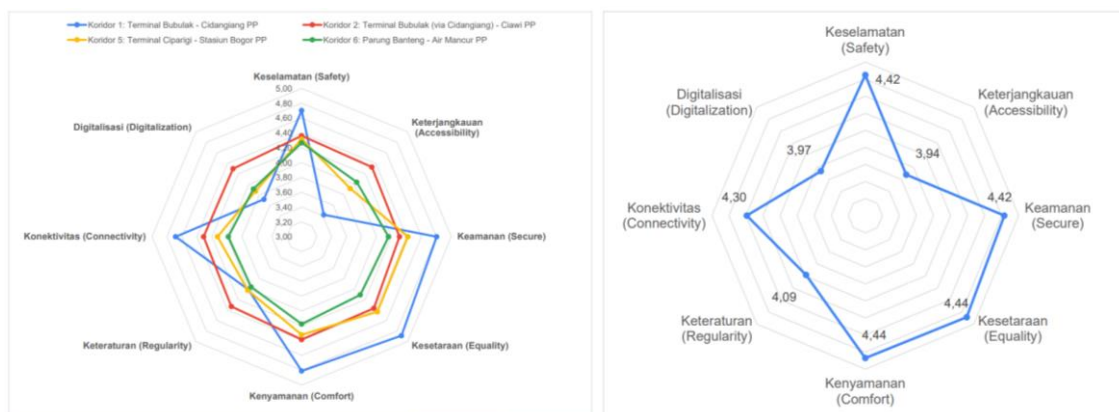
and awareness of applications and digitalization. The character of the people of Bogor City still tends to go show without the

need for an application. This is also because there are no incentives related to using or ordering or paying through the application.

Based on the survey results, the overall perception of Trans Pakuan services is good. This good value is seen from all corridors as well as the values of service standard dimensions per corridor. Corridor 1 service index shows strong in 5 (five) dimensions, but weak in 3 (three) dimensions. Corridors 2, 5 and 6 show a relatively stable service index for the eight dimensions at 3.80 to 4.40. The Bogor City Trans-Pakuan public transport service index shows the dimensions of equality and convenience having the same index of 4.44. The affordability dimension has the lowest index of 3.94. The Bogor City Trans-Pakuan public transport service index for all dimensions is 4.25. This condition shows a good service index. The Trans Pakuan service index according to the public's perception shows a value of 4.25, with a good qualification. The highest index is in corridor 1, the value is 4.38 and the lowest is in corridor 6, the value is 4.08.

The existence of mass transportation, including the service purchase scheme,

includes users who are low income, for mid to higher income, they have not intensively used mass transportation. How can the push and pull policy from the government move people from middle to higher income. As a result, the services that Trans Pakuan has provided are good, but most of them are low-income people where people at this level are given modes of transportation with physically primed fleets, seating facilities, air conditioners and free of charge, so they are definitely very happy. If the establishment of Trans Pakuan operations in 2023 will be paid later, it is likely that the results obtained will not necessarily be stable. The load factor is also likely to decrease, in line with the results of a survey with the Bogor City UMK which is at a value of 4.3 million Rupiah, but based on the survey, more people fill it out and users are those whose income is below 1 million, which is 53%. Residents of Bogor City have shifted their domicile to the outskirts of Bogor city so actually the BRT (Bus Rapid Transport) concept is suitable to accommodate transportation and connectivity for suburban communities.



Picture 8. Trans Pakuan Service Index: as per Corridor (left) and Overall Average Score (right)

Another potential is also about the workforce and those who work. It could be an insight that for the people of Bogor city financial allocation is still quite limited and most of the allocation is for domestic needs. Bus Kita Trans Pakuan must move to reach the middle, upper middle- and higher-income

society. Middle income, upper middle and higher income that have not been touched have never been studied as to what the wants and needs of this community are. The dilemma is that if you want to shift people from higher income from using private vehicles to using mass transportation, of course, service

standards follow higher income standards. Even when the ATP (Ability to Pay)/WTP (Willingness to Pay) survey targeted this group of people, what happened was that the rates were according to their abilities (paying more for better services).

Improving public transport service is directed at several things, namely the quality of public transport services approaching or even exceeding "private vehicle" services by considering the principles of Direct service, On-time Service, Quality service, Certainty service. In addition, incentives or guarantees need to be given to public transport users. Public Transport Service Quality is directed at several points. First, excellent with the performance standards obtained; Customers,

individuals, groups, departments, or companies that receive, pay for service outputs (services and systems). Second, service as the main or complementary activities that are not directly involved in the product manufacturing process but emphasize more on transaction services between buyers and sellers. Third, quality is something that is specifically tangible or intangible from the properties of a product or service. Fourth, the levels are a statement on the system used to monitor and evaluate. Fifth, consistent for not having variations and all services run according to established standards. Last, delivery means provide the right service in the right way and at the right time.

Table 1. Categorization of Respondents' Answers per Dimension in Each Corridor

DIMENSION	CORRIDOR 1	CORRIDOR 2	CORRIDOR 5	CORRIDOR 6
	AVERAGE/CATEGORIZATION			
Safety	4.70 Moderate	4.36 Moderate	4.31 Moderate	4.26 Moderate
Accessibility	3.41 Moderate	4.32 Moderate	3.91 Moderate	4.04 Moderate
Security	4.80 Moderate	4.30 Moderate	4.42 Moderate	4.16 Moderate
Equality	4.88 Moderate	4.36 Moderate	4.43 Moderate	4.10 Moderate
Comfort	4.81 Moderate	4.38 Moderate	4.32 Moderate	4.17 Moderate
Regularity	4.01 Moderate	4.33 Moderate	4.02 Moderate	3.96 Moderate
Connectivity	4.68 Moderate	4.31 Moderate	4.13 Moderate	3.98 Moderate
Digitalization	3.71 Moderate	4.29 Moderate	3.87 Moderate	3.91 Moderate

Yellow highlights represent the lowest score of a dimension from corridor to corridor.

The threshold value of the average categorization is as follows; low category $M < 3.17$, moderate category $3.17 \leq M < 4.76$, and high $M \geq 4.76$.

Table 2. Categorization of Respondents' Answers per Service Dimension

No	Dimension	Deviation Std	Average	Category
1.	Safety	0.77	4.42	Moderate
2.	Accessibility	1.09	3.93	Moderate
3.	Security	0.73	4.41	Moderate
4.	Equality	0.73	4.44	Moderate
5.	Comfort	0.70	4.43	Moderate
6.	Regularity	0.91	4.09	Moderate
7.	Connectivity	0.75	4.29	Moderate
8.	Digitalization	0.91	3.68	Moderate

Yellow highlights represent the lowest score.



Table 3.

QUESTIONS	COR 1	COR 2	COR 5	COR 6
	AVERAGE/CATEGORIZATION			
<i>Safety</i>				
I feel safe taking public transportation in my daily activities	4.87	4.31	4.39	4.34
The driver has driven the vehicle at a safe speed	4.83	4.39	4.33	4.27
Information on routes / routes I get easily and completely	4.41	4.39	4.23	4.19
<i>Accessibility</i>				
Transport departure schedule according to my needs	4.26	4.27	4.26	4.03
The route / route of transportation according to my needs	4.15	4.39	4.03	4.13
Supporting facilities (bus stops, terminals, stations, transit points) are within an affordable distance for me	4.22	4.37	4.13	4.07
The number of fleets (vehicles) has fulfilled the transportation needs of the community	2.22	4.30	3.57	3.98
The number of vehicle capacity is sufficient for the number of passengers	2.24	4.31	3.61	4.00
<i>Security</i>				
I am sure of my own safety until I reach my destination by using mass transit/public transportation	4.87	4.30	4.54	4.19
Transport drivers have complied with traffic signs/signs/rules/discipline	4.80	4.29	4.49	4.19
Vehicles are equipped with the latest equipment/technology to support passenger safety	4.77	4.31	4.26	4.16
I feel safe waiting for my vehicle at bus stops, terminals, stations, and other transit locations	4.78	4.33	4.39	4.09
<i>Equality</i>				
The availability of priority seats on the mass transit/public transportation that I use is sufficient	4.88	4.34	4.46	4.05
Response officers assist in placing passengers in priority seats	4.88	4.30	4.39	4.07
Availability of supporting facilities for the elderly, pregnant women, children, disabilities	4.90	4.42	4.38	4.18
Service fees/tariffs are in accordance with people's purchasing power/consumption	4.88	4.40	4.49	4.13
<i>Comfort</i>				
Transportation in my city is modern and has visually appealing physical facilities	4.65	4.37	4.23	4.09
The inside of the vehicle is clean and hygienic	4.80	4.39	4.26	4.18
Neat looking officers	4.88	4.39	4.33	4.24
Staff are responsive and provide fast service	4.82	4.40	4.38	4.13
Officers have good mastery of travel routes	4.90	4.39	4.33	4.24
<i>Regularity</i>				
Transportation in my city has provided services according to the promised time	4.90	4.39	4.41	4.24
I don't need a long time to wait for the vehicle (at stops, stations, other transit points)	3.70	4.32	3.96	4.01
The time given by the service officers to get on	3.51	4.33	3.72	3.82



and off passengers is sufficient				
<i>Connectivity</i>				
There are effective facilities; shelters, sidewalks, parking, pedestrian, and bicycle paths to other public transportation	4.82	4.34	4.38	4.04
I didn't have to wait long to change modes of transportation and continue my journey	4.63	4.30	3.48	4.10
Intermodal system and service coordination is good	4.65	4.30	4.20	3.83
<i>Digitization</i>				
I can monitor travel needs accurately and in real-time (routes, fares, choice of modes of transportation, travel time, arrival time)	4.77	4.34	4.13	4.02
Our Bus/Bus Friends application has features that are easy and convenient to use/access	3.12	4.30	3.48	3.76
Before you go on a trip, always check the Our Bus/Bus Friends application	3.15	4.22	3.52	3.70
Our Bus/Bus Friends application makes you more effective in determining travel plans	3.13	4.34	3.46	3.66
The Maps and GPS systems in the Friends Bus/Bus application have been able to correctly map the position, distance and time	3.14	4.24	3.54	3.69
I have been well socialized regarding the use of electronic payments/cashless methods at Trans Pakuan	3.05	4.25	3.65	3.85
Using Tap-in to enjoy Trans Pakuan services can be done easily and effectively	4.38	4.32	4.22	4.05
The use of QR Code Scan on Trans Pakuan is needed to increase the effectiveness and efficiency of travel	4.67	4.32	4.39	4.08
I feel safe in making electronic payments at Trans Pakuan	4.69	4.36	4.39	4.20
I feel confident about the effectiveness of implementing Electronic Payment technology and methods at Trans Pakuan	4.71	4.35	4.42	4.26

The mass transit service indicator is a reference that must be followed in fleet operations. The standard headway during busy times is 10 minutes and 15 minutes outside of busy times. The user occupancy rate or load factor with an optimum percentage and a decrease in the number of accidents that occur during operations are indicators of good mass transit operations. With the BTS service purchase scheme, it is appropriate for all fleets to have the same SOP. No driver is allowed to go above the specified speed limit, the vehicle is always in top condition so that the ramp check of the fleet is carried out according to the provisions. Drivers are not allowed to stop carelessly on the side of the road or in the middle of the road. Based on research

conducted by Salasa, et.al (2015) the optimal average downtime for Bus Rapid Transit (BRT) fleets such as Trans Pakuan is no more than 2 minutes.

Direct Service, which is previously stated to shift higher income society to use public transportation also focuses on how to synchronize between modes by assessing people's residences to their destination. However, the challenge is not easy to design O (order) to D (delivery) services because the OD data is still limited. Meanwhile, to attract middle income people, door to door service is typical of middle income. Government cooperation with property developers can be a priority in regional spatial planning through the integration of design and development that



supports strategic routes and points for mass transit to pass through. Flexible and dynamic, there is nothing that does not change, including transportation services, both routes and services. Then for the success of the level of public transport services there is a need for public transport management system support, including; political support from all stakeholders, large and sustainable Government (Central and/or Regional) financial support, professional organization and human resources in their fields, support for a flexible and dynamic public transport operating system, meet the public's need for public transport services, and application of information technology according to the needs.

CONCLUSION

As conclusions, Trans-Pakuan users are dominated by women (53.1%), aged 20-30 years (37.7%), education level D3/S1 (47.9%), student work (55.2%), income level below 1 million (53.3%), as daily BTS users (40.1%), waiting time at bus stops for 11-15 minutes (49.9%), travel time to the bus stop is 5-10 minutes (43.1%), the distance to the bus stop is less than 1 km (38.4%), users do not have the app (56.0%), and never access the app (53.5 %). There are still 61.6% respondents who have distance from stops above 1 kilometer. The travel time to the bus stop is more than 10 minutes by 56.9%. Bus waiting time of more than 15 minutes is 19.7%. Eight dimensions of the Perception Service Index of Trans-Pakuan shows a "good" condition, with a value of 4.25. Corridor 1 gave the highest perceived value of 4.38, corridor 6 had the lowest score of 4.08. Corridor 2 service index was 4.34 and Corridor 5 was 4.18. The service

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index for the safety dimension for all corridors is 4.42, the accessibility dimension is 3.94, the security dimension is 4.42, the equality dimension is 4.44, the comfort dimension is 4.44, the regularity dimension is 4.09, the dimension connectivity is 4.30 and the digitization dimension is 3.97. The accessibility dimension shows the lowest service index of 3.94, "good enough", followed by the digitalization dimension with a value of 3.97 "good enough". The overall public perception service index is 4.25 with a "good" qualification, representing a community with a lower income economic level with an average income of IDR 2,760,000 and services provided at a "Zero" rate (free of charge). The implementation of public transportation has not yet reached the essence of implementing mass public transportation, which pulls and pushes more massive use of private vehicles using public transportation. We recommend that users/passengers of the Trans-Pakuan BTS service are expected to be able to shift society with a higher economic level (middle income and higher income), by conducting an in-depth study to find out the expectations for public transport standards desired by middle income to higher income. Sharpen the impact that will occur in the implementation of the Trans-Pakuan BTS tariff, which has the potential to reduce the number of passengers. Central and/or Province Government should restrict the use of private vehicles by first providing a Mass Public Transport System (SAUM) that can be accepted by the user community.

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