

Evaluation of Selection of Public Transport Mode Corridor Blok M – Bundaran Hotel Indonesian in the New Normal Era with Stated Preference

Andri Irfan Rifai¹, Martindo Gita Dwi Putra², Muhammad Isradi², Amar Mufhidin², Joewono Prasetijo³

Faculty of Civil Engineering and Planning University of Internasional Batam, Indonesia¹

Faculty of Engineering, University Mercu Buana Jakarta, Indonesia²

Faculty of Engineering Technology, Universiti Tun Hussein Onn Malaysia³

andri.irfan@uib.ac.id¹, martindo11gdp@gmail.com², isradi@mercubuana.ac.id²,
amarmufhidin@gmail.com², joewono@uthm.edu.my³

ABSTRACT

Purpose: Transportation is one of the important things in supporting community activities outside the home. Currently, people are faced with the new normal era so they have to adapt to new things due to the COVID-19 pandemic outbreak. This study wants to know about the behavior of the community in the selection of public transportation in the corridor Blok M – Bundaran Hotel Indonesia in the new normal era.

Design/methodology/approach: Data were obtained from the results of a questionnaire survey of users of the Blok M – Bundaran Hotel Indonesia public transport corridor using stated preference methods and used influence attributes in the form of travel costs, travel time, and waiting time. The survey results were collected and then linear regression analysis was performed and modeling was performed using the binomial logit model. Data analysis was carried out from questionnaire data distributed to 100 respondents.

Findings: The survey results were collected and then linear regression analysis was performed and modeling was performed using the binomial logit model. Data analysis was carried out from questionnaire data distributed to 100 respondents. The results of linear regression analysis using the SPSS program obtained a mode selection model, namely $(UMRT-UTJ) = -2.331 + 0.000X_1 + 0.040X_2 + 0.820X_3$, where X_1 is the travel cost variable, X_2 is the travel time variable and X_3 is the waiting time variable. The conclusion obtained from the results of this study is that the MRT is the most preferred mode of public transportation compared to Transjakarta in this new normal era.

Research limitations/implications: Although most of the enterprises surveyed have an idea how to respond to calamities and mitigate disastrous situations, this research argues that a solid policy framework might be drawn through the local government units concerned to institutionalized this effort.

Practical implications: The convenience factor is the main factor for public transport users to choose the MRT, while the travel cost factor is the main factor for public transport users to choose Transjakarta.

Originality/value: This paper is an original work.

Paper type: Research paper

Keywords: Covid-19, MRT Jakarta, New Normal, Stated preference, Transjakarta

Received : July 18th

Revised : July 20th

Published : July 31th

I. INTRODUCTION

Transportation is one of the important things in supporting community activities outside the home. The importance of transportation as one of the main requirements of every modern society cannot be underestimated

(Deka & Carnegie, 2021) Fat. Transportation also plays a role in the development of an area. Because the function of transportation can also be said to be one of the supporters of the economy and regional development in an area. It is a common assumption that cars, buses, trains, and taxis will remain the dominant choice of local transportation modes in the years to come (Ali & Javid, 2020),(Rahim, 2020) .

In the midst of the high activity of the community in using public transportation, they were surprised by an epidemic that is currently engulfing Indonesia and the world. This condition makes all activities limited, including the use of public transportation. This has an impact on the issuance of policies issued by the government to deal with the outbreak.

This study wants to know about the selection of public transportation by the public in the new normal era. Public transportation that is compared is public transportation that passes through the corridor Blok M – Bundaran Hotel Indonesia. The method used in this study uses the stated preference method.

II. LITERATURE REVIEW

A. Public Transportation

Public transportation is all transportation activities using transportation facilities together and there is a tariff system that must be met by users of transportation services (Rahma et al., 2014). Public transportation in general includes trains and buses. However, there are also airline services, ferries, taxis, and others. Public transportation is a means to move people and goods from one place to another. The goal is to help people or groups reach the desired place, or send goods from the place of origin to the destination.

The basic purpose of providing public transportation is to provide good, reliable, comfortable, safe, fast and cheap transportation services for the public (Rahma et al., 2014). In accordance with these basic objectives, public transportation is expected to make it easier for people to travel. Public transportation is also very necessary to reduce traffic congestion. Especially mass public transportation that can transport many people at one time.

B. MRT (Mass Rapid Transit)

The MRT mode of transportation is a new mode of transportation in Jakarta. This MRT mode of transportation is a rail-based transportation mode that is highly awaited by the people of DKI Jakarta in an effort to overcome congestion. MRT Jakarta or the abbreviation of Mass Rapid Transit Jakarta, is an integrated mode of highway transportation or integrated fast transportation. Jakarta is a rapid transit transportation system using electric rail trains that have been built in Jakarta (Fatoni & Hardianti, 2020). The construction of the MRT is expected to be able to make people's mobility easier and faster. In addition, it is also hoped that the presence of the MRT will be able to change the lifestyle of the people of DKI Jakarta to want to use public transportation.

C. BRT (Bus Rapid Transit)

BRT is a high-quality bus-based transportation system, which moves quickly, comfortably, and effectively on a separate roadway infrastructure (Wulan & Tangkudung, 2011), (Fitriati & Aminah, 2011). The BRT system in Indonesia has certain shelters. The shelter has several types, such as transit points and transfer points. In addition, each bus on the BRT has a specific travel route which is usually called a corridor, where each bus passes through a predetermined shelter. Thus BRT is a transportation network.

D. New Normal Era Transportation

Transportation is an activity that cannot be eliminated during the Covid-19 pandemic. This activity has the risk of transmitting COVID-19, especially if you use public transportation and do not comply with health protocols. To overcome this, the government issued Minister of Transportation Regulation (Permenhub) No. 41 of 2020 concerning amendments to Permenhub No. 18 of 2020 concerning transportation control in the context of preventing the spread of COVID-19 (Toyfur et al., 2020). Monitoring must be carried out continuously, especially on transportation activities using public transportation. And also the need for awareness from public transport users to continue to comply with health protocols while on public transport.

E. Stated preference

The Stated preference technique is characterized by the use of experimental designs to build alternative hypotheses to the situation (hypothetical situation) which are then presented to respondents (Toar et al., 2015). Respondents were then asked about what choices they wanted to do or how they made certain ratings or choices in one or more presumed situations. By using this Stated preference technique, the researcher Jurike can fully control the factors that exist in the hypothesized situation.

F. Model Formulation

Identification of options in the questionnaire format using rating techniques (functional measurement) to determine the general characteristics of mode users with five assessment points, namely:

1. Definitely choose Transjakarta;
2. Maybe choose Transjakarta;
3. Balanced choice between Transjakarta or MRT;
4. Maybe choose MRT;
5. Definitely choose MRT.

The data obtained through the primary survey with the questionnaire is still in the form of qualitative data, where individual responses are still in the form of choices to the rating points presented on a scale: 1 = Definitely choose Transjakarta, 2 = Maybe choose Transjakarta, 3 = balanced choice, 4 = Maybe choose MRT , 5 = Definitely choose MRT. The next analysis is the transformation of the data obtained.

The rating points are then transformed into a Numerical Scale (a value that expresses the individual's response to the choice statement) using a linear transformation of the binomial logit model on the probability for each rating point. The value of the numerical scale is the dependent variable in the regression analysis and the independent variable is the difference in attribute values between Transjakarta and MRT.

G. Study Approach

The calculation of the probability analysis of this mode selection is carried out using the binomial logit model.

Probability of using mode 1 (MRT Jakarta):

$$PMRT(1) = \frac{1}{(1 + e^{u-u})} \dots\dots\dots(2.1)$$

Probability of using mode 2 (Transjakarta):

$$PTJ(2) = 1 - PMRT = \frac{e^{u-u}}{(1 + e^{u-u})} \dots\dots\dots(2.2)$$

Where:

- PMRT = Probability to choose MRT Jakarta mode
- PTJ = Probability to choose Transjakarta Bus mode
- U = Utility or mode selection value
- e = exponential

The utility function (UMRT–UTJ) is assumed to be linear, so this utility value can be calculated through multiple linear regression equations that are searched with the help of the SPSS program and the values of the constants and regression parameters are obtained.

The form of this utility function is:

$$UMRT-UTJ = a + b1X1 + \dots\dots\dots + bnXn \dots\dots\dots(2.3)$$

Where:

- UMRT–UTJ = The utility value of both modes
- a. = Constant Parameters
- b1 s/d bn = Regression parameters
- X1 s/d Xn = Variables that affect the behavior of travelers

After the value of UMRT–UTJ is obtained, the probability of selecting each mode can be analyzed.

III. RESEARCH METHODOLOGY

The research method used is descriptive analytical, namely describing an event and then analyzing the problems that arise. Data collection techniques used are interviews or questionnaires with stated preference methods. In this study, the event that will be investigated is the choice of the Transjakarta Bus and Jakarta MRT Train modes in the corridor Blok M - Bundaran Hotel Indonesia. While the variables to be studied are the internal attributes of the mode of service and the probability of choosing the Transjakarta Bus and MRT Jakarta modes, which refer to the factors that influence the choice of modes.

The stated preference technique is a questionnaire technique by making alternative hypothetical travel situations which is a combination of changes in the service attributes of the two modes, then tested on respondents by distributing questionnaires to determine the response of passengers to the experimental travel

situation. The survey results were collected and then linear regression analysis was carried out and modeling was carried out using the binomial logit model.

H. Research Time and Location

The time of the study was conducted on weekdays between Monday-Friday. The study was conducted at 3 times, namely in the morning at 07:00 to 09:00 WIB, then in the midday at 12:00 to 14:00 WIB, and in the afternoon at 17:00 to 19:00 WIB. Where it is intended that taking 3 different times is expected to make the research results more valid.

The research location for the selection of public transportation modes is in the Blok M area, according to the maps and pictures in Figure 3.1. The questionnaires were distributed in the area around Blok M which is close to the bus stop and departure station.

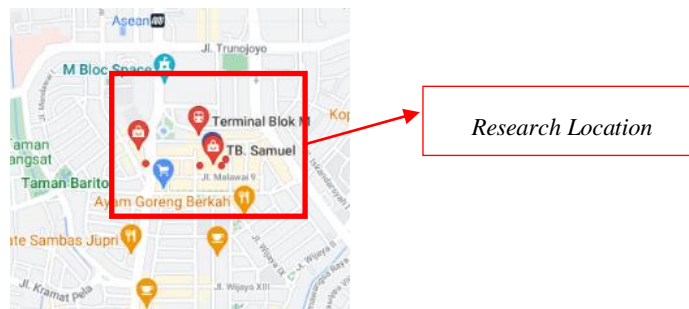


Figure 3. 1 Research Locations Area Blok M

Source: Gmaps and Personal Survey Results, 2022

IV. RESULTS AND ANALYSIS

A. Number of Research Samples

For sampling in this study, a random sample was taken at a predetermined research location. Sampling uses a formula, where the total population has been obtained from the survey results that have been carried out, namely as follows :

Table 1. Result of Survey on Number of Transjakarta and MRT Jakarta Passengers

Number	Survey Time	Total Passenger
<i>Transjakarta</i>		
1	Morning (07:00-09:00)	125

2	Midday (12:00-14:00)	115
3	Afternoon (17:00-19:00)	108
<i>Total</i>		348
<hr/> <i>MRT Jakarta</i> <hr/>		
1	Morning (07:00-09:00)	95
2	Midday (12:00-14:00)	79
3	Afternoon (17:00-19:00)	84
<i>Total</i>		256
<i>Total passenger of MRT & TJ</i>		606

Source: Personal Processed Results, 2022

Then the sample calculation is as follows :

Known:

N = Total population (606 person)

d = Precision value (determined in this research 90% or = 0.1)

Formula:

$$n = \frac{N}{N(d)^2 + 1} \dots \dots \dots (4.1)$$

$$n = \frac{606}{606(0,1)^2 + 1} = 85,84 \approx \mathbf{100 \text{ respondents}}$$

B. Attributes of Each Mode of Transportation

After conducting a preliminary survey, the data on the variables that will be used in the research questionnaire were obtained, the results of the data obtained in the field from the public transportation mode corridor Blok M – Bundaran Hotel Indonesia are as follows :

Table 2. The actual attributes of each mode and service

<i>Number</i>	<i>Travel Attributes</i>	<i>Transjakarta</i>	<i>MRT Jakarta</i>
1.	<i>Travel expense</i>	<i>Rp. 3.500</i>	<i>Rp.8.000</i>
2.	<i>Travel Time</i>	<i>21 minutes</i>	<i>14 minutes</i>
3.	<i>Headaway</i>	<i>Every ± 5 minutes</i>	<i>Every ± 7 minutes</i>

Source: Personal Processed Results, 2022

C. Transportation User Characteristics

Respondents in this study were users or passengers of Transjakarta and MRT corridor Blok M – Bundaran Hotel Indonesia as many as 100 respondents. The characteristics of public transportation users based on the results of the study were divided into eight groups, namely distribution of transportation mode selection in the new normal era, gender, age, last education, type of work, travel needs, frequency of using public transportation in one week, and mode selection factors.

Distribution of the selection of Transjakarta Bus and MRT Jakarta MRT corridors in the Blok M – Bundaran Hotel Indonesia in the new normal era.

Table 3. Distribution of users of the transportation mode corridor Blok M – Bundaran Hotel Indonesia

<i>Number</i>	<i>User Respondents</i>	<i>Total</i>	<i>Percentage (%)</i>
1.	<i>Transjakarta</i>	40	40
2.	<i>MRT Jakarta</i>	60	60
	<i>Total</i>	100	100

Source: Personal Processed Results, 2022

1. Characteristics of Respondents Based on Gender

Table 4. Characteristics of Respondents Based on Gender

<i>Number</i>	<i>Gender</i>	<i>Transjakarta</i>		<i>MRT Jakarta</i>	
		<i>Total</i>	<i>Percentage</i>	<i>Total</i>	<i>Percentage</i>
1.	<i>Male</i>	19	47.5	28	46.67
2.	<i>Female</i>	21	52.5	32	53.33
	<i>Total</i>	40	100	60	100

Source: Personal Processed Results, 2022

The results showed that the majority of respondents using the Transjakarta and MRT Jakarta modes of transportation were female. This is possible because male use private vehicles more because they prioritize accessibility in carrying out their daily activities.

2. Characteristics of Respondents Based on Age

Table 5. Characteristics of Respondents Based on Age

<i>Number</i>	<i>Age</i>	<i>Transjakarta</i>		<i>MRT Jakarta</i>	
		<i>Total</i>	<i>Percentage</i>	<i>Total</i>	<i>Percentage</i>
1.	<i>< 18 years</i>	1	2.5	1	1.67
2.	<i>18-20 years</i>	1	2.5	1	1.67
3.	<i>21-30 years</i>	34	85	53	88.33
4.	<i>31-40 years</i>	1	2.5	2	3.33
5.	<i>41-50 years</i>	2	5	2	3.33

6.	> 51 years	1	2.5	1	1.67
	<i>Total</i>	40	100	60	100

Source: Personal Processed Results, 2022

The majority of users of the Transjakarta and MRT Jakarta modes of transportation are in the 21-30 years range respectively. It is possible that the dominant users are those of working and productive age, besides that the Blok M – Bundaran Hotel Indonesia is a busy office line.

3. Characteristics of Respondents Based on Last Education

Table 6. Characteristics of Respondents Based on Last Education

Number	Last Education	Transjakarta		MRT Jakarta	
		Total	Percentage	Total	Percentage
1.	Primary school	0	0	0	0
2.	Middle School/ Equivalent	0	0	0	0
3.	High School/ Equivalent	4	10	2	3.33
4.	Diploma	13	32.5	17	28.33
5.	Bachelor (S1)	23	57.5	41	68.33
6.	Postgraduate (S2/S3)	0	0	0	0
	<i>Total</i>	40	100	60	100

Source: Personal Processed Results, 2022

Users of the Transjakarta and MRT Jakarta modes are dominated by respondents with an undergraduate education background (S1). This is possible because the corridor Blok M – Bundaran Hotel Indonesia is an office route, which is dominated by office workers with the latest Bachelor's degree (S1) education.

4. Characteristics of Respondents by Type of Work

Table 7. Characteristics of Respondents by Type of Work

Number	Type of Work	Transjakarta		MRT Jakarta	
		Total	Percentage	Total	Percentage
1.	Civil Servant, Soldier/Police	11	27.5	13	21.67
2.	BUMN/BUMD Employee	6	15	10	16.67

3.	<i>Private Employees</i>	14	35	28	46.67
4.	<i>Entrepreneur</i>	2	5	0	0
5.	<i>Retired/Not Working</i>	0	0	0	0
6.	<i>Student</i>	3	7.5	2	3.33
7.	<i>Other</i>	4	10	7	11.67
	<i>Total</i>	40	100	60	100

Source: Personal Processed Results, 2022

Users of the Transjakarta and MRT Jakarta modes are dominated by respondents with a background type of work as private employees. This can be made possible because the location of the office which is along the corridor there are many private offices.

D. Characteristics of Respondents Based on Travel Needs

Table 8. Characteristics of Respondents Based on Travel Needs

<i>Number</i>	<i>Based on Travel Needs</i>	<i>Transjakarta</i>		<i>MRT Jakarta</i>	
		<i>Total</i>	<i>Percentage</i>	<i>Total</i>	<i>Percentage</i>
1.	<i>Work</i>	29	72.5	37	61.67
2.	<i>Shop</i>	1	2.5	7	11.67
3.	<i>Recreation</i>	1	2.5	2	3.33
4.	<i>School/College</i>	2	5.0	2	3.33
5.	<i>Meeting Friends/Family</i>	5	12.5	10	16.67
6.	<i>Other</i>	2	5.0	2	3.33
	<i>Total</i>	40	100	60	100

Source: Personal Processed Results, 2022

Users of the Transjakarta and MRT Jakarta modes are dominated by respondents with travel needs for work. This is possible because the location of the corridor is an office line.

1. Characteristics of Respondents Based on Frequency of Use in 1 Week

Table 9. Characteristics of Respondents Based on Frequency of Use in 1 Week

Number	Based on Frequency of Use in 1 Week	Transjakarta		MRT Jakarta	
		Total	Percentage	Total	Percentage
1.	≤ 2 times	24	40	8	20
2.	3-5 times	8	13.33	7	17.5
3.	> 5 times	28	46.67	25	62.5
	<i>Total</i>	<i>40</i>	<i>100</i>	<i>60</i>	<i>100</i>

Source: Personal Processed Results, 2022

Users of the Transjakarta and MRT Jakarta modes are dominated by respondents with a frequency of use in 1 week as much as > 5 times. Because the corridor is an office route and most users of transportation modes use it to go and return, so the frequency of use is getting more frequent.

2. Transportation Mode Selection Factors from Respondents Using Mode of Transportation

Table 10. Characteristics of Respondents Based on Mode Selection Factors

Number	Based on Mode Selection Factors	Transjakarta		MRT Jakarta	
		Total	Percentage	Total	Percentage
1.	Security	8	20	13	21.67
2.	Convenience	11	11	20	33.33
3.	Cost	14	14	9	15
4.	Traveling time	7	7	18	30
	<i>Total</i>	<i>40</i>	<i>100</i>	<i>60</i>	<i>100</i>

Source: Personal Processed Results, 2022

Based on the transportation mode selection factor, as many as 14 Transjakarta users (35% of the total number who chose Transjakarta) chose the cost factor related to the reasons/factors in choosing the Transjakarta transportation mode. While for MRT Jakarta users, as many as 20 MRT Jakarta users (33.33% of the total number who chose MRT Jakarta) chose the convenience factor related to reasons/factors in choosing the MRT Jakarta transportation mode.

According to the results of the questionnaire, it can be concluded that transportation users choose Transjakarta because the cost factor is cheaper than the MRT. Meanwhile, those who choose MRT Jakarta feel that the convenience factor is better than using Transjakarta.

E. Data Transformation

The transformation process is carried out to change the respondents in the form of qualitative data so that analysis can be carried out on the data that has been obtained. The data changes are made based on a certain numerical scale. The determination of the numerical scale of the respondents' answers is based on the linear equation of the binomial logit model (Anshori & Iswati, 2017). Natural logarithm equation :

$$Ln = \frac{(P)}{1-P} \dots\dots\dots(4.2)$$

The transformation process from point rating into a numerical scale is as follows :

1. The value of the probability scale of choice represented by the rating points 1, 2, 3, 4 and 5 is for example the standard scale value of 0.9; 0.7 ; 0.5 ; 0.3 ; and 0.1.
2. By using the linear transformation of the binary logit model, a numerical scale value can be obtained for each choice probability. For point rating 1 with a probability value of 0.9, the numerical scale value is: $\ln [0.9/(1-0.9)] = 2.1972$. For point rating 2 with a probability value of 0.7, the numerical scale value is: $\ln [0.7/(1-0.7)] = 0.8473$.

Table 11. Numerical Scale Values Based on Respondents Choice

<i>Probability Scale Score</i>	<i>Natural Logarithmic Value</i>	<i>Point Rating</i>
0.9	2.1972	1. Definitely Choose MRT
0.7	0.8473	2. Maybe Choose MRT
0.5	0	3. Balanced Choice
0.3	-0.8473	4. Definitely Choose Transjakarta
0.1	-2.1972	5. Maybe Choose Transjakarta

Source: Personal Processed Results, 2022

After the data transformation is obtained, then the survey data is calculated on the respondents' choices for changes in one of the attributes for one respondent based on the existing mode conditions in the preliminary survey results.

Table 12. Research Questionnaire Survey Data

<i>Number</i>	<i>Choice</i>	<i>Numerical Scale Value</i>	<i>Δ Cost (X1)</i>	<i>Δ Travel Time (X2)</i>	<i>Δ Head Way (X3)</i>
1	1a	2.1972	4500	-10	0
	1b	2.1972	3000	-10	0
	1c	2.1972	0	-10	0
	1d	2.1972	-3000	-10	0
	1e	2.1972	-4500	-10	0
2	2a	2.1972	4500	-10	0
	2b	2.1972	4500	-5	0
	2c	2.1972	4500	0	0

	2d	0.8473	4500	5	0
	2e	0.8473	4500	10	0
3	3a	2.1972	4500	-10	0
	3b	-0.8473	4500	-10	5
	3c	-0.8473	4500	-10	5
	3d	2.1972	4500	-10	-5
	3e	-2.1972	4500	-10	10

Source: Personal Processed Results, 2022

F. Transportation Selection Model Analysis

Based on the results of the analysis of calculations using SPSS, the equation for the difference in utility between the Jakarta MRT Train and Transjakarta Bus Corridor Blok M - Bundaran Hotel Indonesia is as follows :

$$(UMRT-UTJ) = -2.331 + 0.00.X1 + 0.040.X2 + 0.820.X3 \dots\dots\dots(4.3)$$

Based on the sign in the coefficient of the equation above, it can be explained that :

1. The constant of -2.331 states that if there is no difference in costs (X1), Travel Time (X2), Waiting Time (X3) then the difference in utility is -2.331.
2. Cost regression coefficient (X1) is 0.000, stating that for each addition of one, there will be no increase or decrease in the difference in utility because it is worth 0.000 even though it is negative (-).
3. The regression coefficient for Travel Time (X2) is 0.040, which states that for each addition of one, there will be an additional difference in utility of 0.040 (because of +).
4. The waiting time regression coefficient (X3) is 0.820, stating that for each addition of one, there will be an additional difference in utility of 0.820 (because of +).

Furthermore, the difference in utility of choice 1a can be analyzed and the results of the difference in utility for other attribute changes can be seen in Table 4.15 so that the value of the difference in utility 1a is :

$$\begin{aligned} (UMRT-UTJ) &= -2.331 + 0.00.X1 + 0.040.X2 + 0.820.X3 \\ &= -2.331 + 0.00.(4500) + 0.040.(-10) + 0.820.(0) \\ &= - 2.731 \end{aligned}$$

Furthermore, the calculation of the probability analysis of mode selection can be done using the formula : Probability of choosing the Jakarta MRT Train mode :

$$PMRT = \frac{1}{(1+e^{U-U})} \dots\dots\dots(4.4)$$

$$\begin{aligned} PMRT &= \frac{1}{(1+e^{-2.731})} \\ PMRT &= 0.939 \end{aligned}$$

Probability of choosing Transjakarta bus mode :

$$\begin{aligned} PTJ &= 1 - PMRT \dots\dots\dots(4.5) \\ PTJ &= 1 - 0.939 \\ PTJ &= 0.061 \end{aligned}$$

Table 13. Probability of Mode Selection Based on Attribute Change

<i>Number</i>	<i>Choice</i>	Δ Cost (X1)	Δ Travel Time (X2)	Δ Head Way (X3)	<i>UMRT- UTJ</i>	<i>MRT</i>	<i>TJ</i>	<i>MRT</i> (%)	<i>TJ</i> (%)
1	1a	4500	-10	0	-2.731	0.939	0.061	93.883	6.117
	1b	3000	-10	0	-2.731	0.939	0.061	93.883	6.117
	1c	0	-10	0	-2.731	0.939	0.061	93.883	6.117
	1d	-3000	-10	0	-2.731	0.939	0.061	93.883	6.117
	1e	-4500	-10	0	-2.731	0.939	0.061	93.883	6.117
2	2a	4500	-10	0	-2.731	0.939	0.061	93.883	6.117
	2b	4500	-5	0	-2.531	0.926	0.074	92.629	7.371
	2c	4500	0	0	-2.331	0.911	0.089	91.141	8.859
	2d	4500	5	0	-2.131	0.894	0.106	89.388	10.612
	2e	4500	10	0	-1.931	0.873	0.127	87.336	12.664
3	3a	4500	-10	0	-2.731	0.939	0.061	93.883	6.117
	3b	4500	-10	5	1.369	0.203	0.797	20.278	79.722
	3c	4500	-10	5	1.369	0.203	0.797	20.278	79.722
	3d	4500	-10	-5	-6.831	0.999	0.001	99.892	0.108
	3e	4500	-10	10	5.469	0.004	0.996	0.420	99.580

Source: Personal Processed Results, 2022

V. CONCLUSION AND SUGGESTION

A. Conclusion

The results of the analysis and discussion of the selection of transportation modes for the corridor Blok M – Bundaran Hotel Indonesia in the new normal era are :

1. The general characteristics of transportation users in the selection of modes are as follows :
 - a. Of the 100 respondents who filled out the questionnaire, 60% chose MRT Jakarta and 40% chose Transjakarta.
 - b. The gender of users of MRT Jakarta and Transjakarta modes is more dominated by female, at 53.33% and 52.5%, respectively.
 - c. The majority of users of MRT Jakarta and Transjakarta are in the 21-30 years range, respectively, at 88.33% and 85%.

- d. Users of MRT Jakarta and Transjakarta are dominated by respondents with a bachelor's (S1) educational background. Where respectively 68.33% and 57.5%.
 - e. Users of MRT Jakarta and Transjakarta are dominated by respondents with a background of type of work as private employees. Where respectively are 46.67% and 35%.
 - f. Users of MRT Jakarta and Transjakarta are dominated by respondents with travel needs for work. Where respectively are 61.67% and 72.5%.
 - g. Users of MRT Jakarta and Transjakarta modes are dominated by respondents with frequency of use in 1 week as much as > 5 times. Where respectively 62.5% and 46.67%.
2. Based on the choice of transportation mode, as many as 33.33% of MRT Jakarta users chose the convenience factor related to the reasons/factors in choosing the MRT Jakarta transportation mode. Meanwhile, 35% of Transjakarta users chose the cost factor related to the reasons/factors in choosing the Transjakarta transportation mode.
 3. The attributes of travel costs, travel time and waiting time for departure have a considerable influence on respondents in determining the mode to be used in their journey. The following are the results of the stated preference survey data analysis that has been carried out in the form of utility functions and probability models :

Utility	Functions	:
(UMRT-UTJ) = -2.331 + 0.00.X1 + 0.040.X2 + 0.820.X3.....		(5.1)

Probability	Models	:
$PMRT = \frac{1}{(1+e^{U-U})}$		(5.2)

PTJ = 1 - PMRT.....		(5.3)
---------------------	--	-------

B. Suggestion

Based on the survey that has been carried out in the selection of modes, it is hoped that this will be another input :

1. For further research, it is recommended to find, design and add other attributes to be significant in influencing the utility of mode selection.
2. The Transjakarta party is to be able to improve the quality of service, especially in terms of safety and comfort for passengers as service users of the Transjakarta Bus mode in order to obtain modes that are in accordance with the expectations of travellers.
3. The MRT Jakarta party should be able to consider travel costs so that the lower middle class can also enjoy MRT Jakarta transportation without being burdened with quite expensive costs.
4. Transjakarta and MRT Jakarta parties to improve the cleanliness of public transportation such as washing hands, wearing masks and maintaining distance and limiting passengers to avoid Covid19 in the new normal era, so that it is safer and more comfortable for the community.

REFERENCES

Ali, N., & Javid, M. A. (2020). Predicting Transit Mode Choice Behavior from Parents' Perspectives: A Case Study in Lahore, Pakistan. *Journal of Civil Engineering*, 14(4), 476–489.

Anshori, H. M., & Iswati, H. S. (2017). *Metodologi penelitian kuantitatif*. Surabaya : Airlangga University Press, 2017.

Deka, D., & Carnegie, J. (2021). Predicting transit mode choice of New Jersey workers commuting to New York City from a stated preference survey. *Journal of Transport Geography*, 91, 102965.

Fatoni, A., & Hardianti, D. (2020). Pengaruh Fasilitas Dan Kualitas Pelayanan Terhadap Keputusan Menggunakan Jasa Transportasi Mrt Atau Mass Rapid Transit. *Mediastima*, 26(1), 117–134. <https://doi.org/10.55122/mediastima.v26i1.99>

Fitriati, R., & Aminah, S. (2011). Sistem Bus Rapid Transit Transjakarta Dalam Studi Rekeyasa Sosial. *Jurnal Transportasi FSTPT*. <https://doi.org/10.26593/jt.v11i1.437.%p>

Rahim, A. (2020). Predicting Transit Mode Choice Behavior from Parents' Perspectives: A Case Study in Lahore, Pakistan. *Journal of Civil Engineering*, 14(4), 476–489.

Rahma, S., Wijayanti, D. A., Ismiyati, I., & Purwanto, D. (2014). Penyediaan Transportasi Umum Masa Depan Di Kota Semarang. *Jurnal Karya Teknik Sipil*, 3(1), 154–166.

Toar, J. I., Timboeleng, J. A., & Sendow, T. K. (2015). Analisa Pemilihan Moda Angkutan Kota Manado – Kota Gorontalo menggunakan Model Binomial-Logit-Selisih. *Jurnal Sipil Statistik*, 3(1). <https://ejournal.unsrat.ac.id/index.php/jss/article/view/6790>

Toyfur, M., Agustien, M., & Permata, D. (2020). Penyuluhan Aman Menggunakan Transportasi Umum Era

New Normal Pada Pengguna Angkutan Umum Di Terminal Alang Alang Lebar Kota Palembang.
Applicable Innovation of Engineering and Science Research (AVoER), 796–805.

Wulan, E. S., & Tangkudung, R. M. (2011). Sistem Bus Rapid Transit Transjakarta Dalam Studi Rekayasa Sosial. *Jurnal Transportasi*, 11(1). <https://doi.org/https://doi.org/10.26593/jtrans.v11i1.437.%25p>

Biography

Martindo Gita Dwi Putra., born in Sukoharjo 11 March 1996. He will achieve a Bachelor's degree in Civil Engineering at Mercu Buana University in 2022. She obtained the title of Associate Engineering Expert from Diploma 3 program in Civil Engineering department at State Polytechnic of Jakarta in 2017. He is currently working at Dinas Bina Marga province DKI Jakarta.

Andri Irfan Rifai., is a Senior Lecturer of Civil Engineering and Planning. He completed the PhD at the Universitas Indonesia & Universidade do Minho with Sandwich Program Scholarship from the Directorate General of Higher Education and LPDP scholarship. He has been teaching for more than 19 years and much active in applying his knowledge in Indonesia's project construction. His research interest ranges from the pavement management system to advanced data mining techniques for transportation engineering. He has published more than 50 papers in journals and 2 books.

Muhammad Isradi., born in Kandangan on 18 August 1972. He is the secretary of the Civil Engineering department at Mercu Buana University. He earned a degree in Civil Engineering from Universitas Muhammadiyah Malang in 1998 with the thesis entitled "One-Way Flat Plate Planning at Ratu Plaza Madiun. He then obtained a Master's degree in Civil Engineering, Transportation Concentration from Brawijaya University in 2001 with a thesis entitled "Family Movement Awakening Model in Sawojajar Housing Area, Malang". He also teaches several subjects such as Pavement Planning, Geometric Road Planning, Transportation Planning and Environmental Engineering.

Amar Mufhidin., born in Majalengka, 16 June 1991. He is a lecturer in several study programs: pavement planning, road geometric planning, and transportation planning. He gained a degree in Civil Engineering from Universitas Pendidikan Indonesia and a Masters in Civil Engineering with a concentration in the field of transportation from Institut Teknologi Bandung. He has a pavement expertise certificate from the Indonesia's Construction Services Regulatory Agency. He is also still active in road planning projects in Indonesia.