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ANALYSIS OF NEED, ACCURACY, AND SPEED IMPACTS ON PASSENGER INTERESTS ON JAKARTA LRT

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Abstract: The LRT (Light Rail Transit) transportation mode was chosen as a transit mode in the development of ROD (Rail Oriented Development) rail-based transportation in Jakarta. The LRT is a sustainable fast transportation system, which was built to overcome the congestion problem in Jakarta. This research is a descriptive qualitative research with observations using cross sectional type with the data collection process carried out at the same timeThe results of the study analyzed using the chi-square test, the p-value of 1,000 > = 0.05, shows that there is no relationship between the variables of Need, Accuracy, and Speed of Passenger Interest in Taking the LRT

Keywords: *Need, Accuracy, Speed, LRT*

Background

The act of physically moving people or products from one location to another within a set amount of time is known as transportation. Transportation is typically broken down into three categories: land transportation, maritime transportation, and aviation transportation. Transportation can assist you to arrive at your destination on time because the majority of transportation services inside cities, between cities, and between islands have set departure and arrival times. One of the service industries with a significant impact on the economy of DKI Jakarta is public transportation, particularly land transportation. DKI Jakarta is nevertheless quite near to the traffic problems that take place practically everywhere in the city. The government still has some research to do on this.

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Given the issue of congestion in DKI Jakarta, additional facilities or instruments are required to solve this issue. Of course, the quality of services that are effective and efficient must be prioritized in the transportation services offered. Light Rail Transit, also known as Integrated Crossroads or LRT, is one of the transportation options that can enhance community mobility and provide an alternate solution to existing issues. One of the most well-liked rail transit options in the capital city isJakarta LRT (Light Rail Transit), often known as the Integrated Railroad or Light Rail. Apart from having its own track which means it is not disturbed by other traffic, Jakarta LRT is also a light rail train that has a carrying capacity twice as large as an integrated bus.(Haryono, Darunanto, and Wahyuni 2019)

The LRT (Light Rail Transit) mode of transportation was chosen as a transit mode in the development of rail-oriented ROD (Rail Oriented Development) transportation in Jakarta. Based on this, it is necessary to conduct research related to the service factors expected by prospective users of Jakarta LRT services, so that when the LRT is operated, at least it knows the services expected by users. The LRT is a sustainable fast transportation system, which was built to overcome the congestion problem in Jakarta.

Literature review

Light Rail Transit (LRT)

Jakarta LRT (Light Rail Transit) or Integrated Railroad or Light Rail is one of the most popular modes of rail transportation in the capital city. Jakarta LRT, apart from having its own track which means it is not disturbed by other traffic, is also a light rail that has a carrying capacity twice as large as an integrated bus. Macro, Light Rail Transit, hereinafter abbreviated as LRT, is a fast mass public transportation using light rail.

The Need for LRT

With Jakarta’s bustling and globalized activities, government must act quickly to break its "familiarity" with traffic jams. The goal is of course to make the capital city of Indonesia more "friendly" in the eyes of the world

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and most importantly, it can make residents who live in it more comfortable in doing their activities. Here are the reasons why LRT is needed:

a. LRT as a solution

The presence of Jakarta LRT is a new breakthrough made by the government after the usual methods were unable to provide a solution. LRT or Light Rail Transit as a means of mass transportation seems to really be the answer to the problems experienced by the people in the capital.

b. LRT participates in reducing traffic jams.

The existence of means of transportation at this time is so important, like feet, if there are no people, it will be difficult to carry out their daily activities.

c. LRT helps reduce pollution

It is undeniable that one of the contributors to pollution in the capital comes from exhaust fumes from motorized vehicles. Therefore, by switching to using LRTJ which is more friendly because it uses electric power as a driver, it means that you have actively helped reduce the spread of carbon dioxide gas in Jakarta.

Accuracy

Timeliness shows the time span between the presentation of the desired information and the frequency of reporting information. Timely information will affect the manager's ability to respond to any incident or problem. If the information is not delivered on time, it will cause the information to lose its value in influencing the quality of decisions.

Speed

Speed is expressed as the speed of a vehicle movement calculated in distance per unit time (km/hour) (FD Hobbs, 1995). In general, the speed is divided into three types as follows.

a. Local speed (Spot Speed), namely the speed of the vehicle at a time measured from a specified place.

b. Running speed, which is the average vehicle speed in a lane when the vehicle is moving and is obtained by dividing the length of the path divided by the length of time the vehicle moves through the lane.

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c. Travel speed (Journey Speed), which is the effective speed of a vehicle traveling between two places and is the distance between two places divided by the length of time the vehicle completes the journey between the two places.

Wills and Interests

Willingness to take public transportation such as LRT can be divided into 2, namely Ability To Pay (ATP) and Willingness To Pay (WTP):

a. Ability To Pay (ATP)

Ability To Pay is a person's ability to pay for services he/she has received based on income that is considered ideal. The approach used in the ATP analysis is based on the allocation of costs for transportation and the intensity of the user's journey. The amount of ATP is the ratio of the budget for transportation to the intensity of the trip.

b. Willingness To Pay (WTP)

Willingness To Pay (WTP) is the willingness of users to issue services or rewards for the facilities they have received. The approach used in the WTP analysis is based on user perceptions of tariffs and public transport services. Willingness to pay is also based on the concept of consumer surplus which is the difference between the willingness to pay which is the utility value obtained from goods or services purchased with the actual price paid.

Method

Types of research

This research is a descriptive qualitative research with observations using cross sectional type with the data collection process carried out at the same time. The cross sectional research design has advantages such as simple, economical, easy to use, and the results can be obtained quickly.

Data collection technique

Data collection techniques used in this study were:

1) Questionnaire

The research used to obtain data in this study used a questionnaire. Questionnaires are data collection techniques that are carried out by giving

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written statements to respondents to be answered. The questionnaire used in this study was in the form of a Questionnaire with a Likert Scale type. The Likert scale is a psychometric scale commonly used in questionnaires. The Likert scale is most often used in research that uses survey methods. The Likert scale is often used for questionnaires that reveal a person's attitudes and opinions towards a phenomenon.

Respondents' responses were described in the form of a range of answers ranging from inappropriate to very appropriate. The answer column is already available and the respondent only needs to choose one of the available answers by putting a check mark in each column of answers according to the statement.

2) Observation

Observational data that can be obtained by making direct observations at the research site directly on the object to be carried out by researchers related to the problems that have been described in the background

3) Documentation

Documentation during the implementation of existing activities at the research location were collected through photos, as evidence of research implementation.

Data Management and Analysis

Data management was done by knowing and analyzing by making observations and data from questionnaires that have been distributed, and documents using SPSS data and photo documentation.

1. Univariate Test

Univariate analysis aims to explain or describe the characteristics of each research variable. The form of univariate analysis depends on the type of data. In general, this analysis only produces the distribution of the frequency and percentage of each variable. The research data were described in the form of tables, graphs and narrations, to evaluate the proportion of each independent variable studied.

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2. Chi Square Test

Chi Square Test statistical test were conducted through the SPSS Version 22.0 computer program with the interpretation of the results as follows:

1. If the p value 0.01 then the test results are declared very significant
2. If p value > 0.01 but 0.05 then the test results are declared significant
3. If the p value > 0.05 then the results are declared not significant

Results and Discussion

Univariate Analysis

1. Characteristics of Respondents Based on Gender

From the results of the study showed that the respondents were male with a total of 40 people (40%) and the total female respondents were 60 people (60%). Can be seen in the table below:

Table 1 frequency distribution based on respondent's gender

No	Gender	Frequency	Percent (%)
1.	Male	40	40%
2.	Woman	60	60%
	Total	100	100%

2. Characteristics of Respondents Based on Age

Characteristics of respondents based on age can be concluded that respondents who have an age <17 years there are 4 people (4%), 17-25 years there are 78 people (78%) 26-35 years there are 7 people (7%), 35 - 45 years there are 5 (5%) people and > 45 years there are 6 people (6%). It is depicted in the table below:

Table 2 Table of frequency distribution of respondents' characteristics by age

No	Age	Frequency	Percent (%)
1.	< 17 Years	4	4%
2.	17 – 25 Years	78	78%
3.	26 – 35 Years	7	7%
4.	36 - 45 Years	5	5%
5	>45 Years	6	6%
	Total	100	100%

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3. Frequency Distribution of Respondents' Characteristics Based on Educational Background

Based on the frequency distribution table below, it can be seen that the respondent's educational background is D3 as many as 7 people (7%), high school as many as 72 people (72%), and S1 as many as 21 people (21%). It can be seen in the table below.

Table 3 Table of frequency distribution of respondents' characteristics based on Educational Background

No	Educational Background	Frequency	Percent (%)
1.	D3	7	7%
2.	SENIOR HIGH SCHOOL	72	72%
3.	S1	21	21%
	Total	100	100%

Discussion

In this study, based on the results of the analysis using the chi-square test, the p-value of 1,000 >□= 0.05 which means that there is no relationship between the variables of Need, Accuracy, and Speed on Passenger Interest in Taking the LRT. From the research results obtained there are 100 respondents with various educational backgrounds and from various age groups. Most of them provide a variety of varied and supportive answers in order to achieve the objectives of this research.

Conclusions and recommendations

Conclusion

- In this study, based on the results of the analysis using the chi-square test, the p-value of 1,000 > = 0.05, which means that there is no relationship between the variables of Need, Accuracy, and Speed of Passengers' Interest in Taking the LRT
- There is no relationship between the need for passenger interest in

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taking the Jakarta LRT

- There is no influence between Accuracy on the Interest of Passengers Riding the Jakarta LRT
- There is no influence between speed on passenger interest in taking the Jakarta LRT

Suggestion

- The local government should be more aggressive in carrying out promotional activities so that the public realizes that in Jakarta there is an LRT
- Fix any deficiencies that exist in public transportation to maintain public safety and comfort when using the LRT
- Adding officer personnel to make it easier for people who may experience confusion when riding the LRT
- Adding more varied routes so that people can easily reach their destination

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