# The Analysis Of Factors Of Passengers' Desires In Using Intracity And Intercity Public Transportation Of Banjarmasin

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# The Analysis Of Factors Of Passengers' Desires In Using Intracity And Intercity Public Transportation Of Banjarmasin

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***ABSTRACT***
*The public transportation in this city of Seribu Sungai (A Thousand Rivers) can be arguably said as far from being comfortable. The transportation vehicles which have been very old and have not been being properly maintained have consequently made this mode of transportation left by its users making it one of the causing factors of decreasing people's intentions of using the public transportation. This condition has also deteriorated by the unreadiness of the transportation system to compete with the online transportation system in this city of Banjarmasin. The mindset of "use what is available" can no longer be the basis of approach to both users and soon-to-be-users but it has to become "provide what is needed" instead.*
*This research was aimed at analyzing and identifying the factors of the passengers' desires in using the intracity and within-province intercity public transportation in Banjarmasin city as well as analyzing the best strategies in order to improve the usage intensity of the public transportation in Banjarmasin city. The data collection used the technique of direct interview survey on the users of both intracity and within-province intercity in Banjarmasin. The factors taken in this research were the characteristic of the transportation system, the characteristic of the travel and the characteristic of the traveller as well as the twenty-six indicators used as the research variables. The data analysis applied the Partial Least Square (PLS) approach analysis with the aid of the SmartPLS 3.2 software.*
*The results of the PLS analysisshown that the factors influencing the intracity transportation passengers' desires from the characteristic of the transportation system were the indicators of using the public transportation if the location of the transit facility is close to the residence, the public transportation provides comfort, the practical payment system, the transportation vehicles are roadworthy and the transportation vehicles are not harmful to children, pregnant women and people with disabilities. The characteristic of the travel with the indicator of using the public transportation if the public transportation fulfills the needed travel time (morning, noon, afternoon, evening and holidays). The characteristic of the traveller with the indicators of using the public transportation if the driver does not smoke, the driver's identity is available, the driver does not drive recklessly and the driver's health is always controlled. Whereas the factors influencing the passengers' desires of the intercity transportation from the characteristic of the transportation system were the indicators of using the public transportation if the public transportation provides comfort, the transportation vehicles are roadworthy and the transportation vehicles are not harmful to children, pregnant women and people with disabilities. The characteristic of the travel with the indicator of using the public transportation if the public transportation fulfills the needed travel time (morning, noon, afternoon, evening, and holidays). The characteristic of the traveller with the indicators of using the public transportation if the driver does not smoke, the driver's identity is available, the driver does not drive recklessly and the driver's health is always controlled.*
***Keywords :*** *intracity transportation, within-province intercity transportation, passengers' desires, Partial Least Square.*

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## I. INTRODUCTION

The transfer of goods and human from one place to another is the definition of the transportation according to Nasution (1996). The transportation is the movements of people's actions in space, both in terms of bringing themselves and goods (Soesilo, 1999). There are two main roles of the transportation infrastructure, namely as the means of support in order to direct the development in urban areas and as the infrastructure for the movements of humans and/or goods which occur as the consequences of activities taking place in urban areas (Tamin, 1997).

The condition of the public transportation in Banjarmasin city can arguably be said as being in a critical state. This is indicated by the decreasing routes of the intracity public transportation from fifteen routes in 2018 to five routes in 2020, while the usage of private vehicles is increasing both from the aspects of population and utilization, thus causing the traffic jam and the air pollution as well.

According to Nugroho (2019), one of the public transportation services highly needed is the city transportation. The facility, infrastructure and operation of the public transportation that currently runs are considered to be not adequate yet. Additionally, one of the elements of the public transportation service according to Pamungkas (2019) is the availability of the transportation service that serves the travel between regencies/cities in the territory of the South Kalimantan province in the form of the Within-Province Intercity Transportation (WPIT). The balance between the availability and the demand is the indicator of a good transportation service (Warpani, 1990).

This research was aimed at analyzing and identifying the factors influencing the passengers' desires in using the intracity and the within-province intercity public transportation in Banjarmasin as well as identifying the indicators wanted by the users of the intracity and the within-province intercity public transportation in Banjarmasin that are not listed on the Regulation of the Minister No. 29 in 2015 regarding the Minimum Standard of Service.

## II. THE RESEARCH METHOD

This research was carried out by only assessing the aspect of the users or the travellers of the intracity and the intercity public transportation in Banjarmasin. The locations of the data sampling were focused more at the main terminal of KM 6 and the Antasari Market Terminal in Banjarmasin.

There were one hundred and fifty users of both the intracity and the intercity public transportation in Banjarmasin taken as the sample in this research. They were at the locations of the research.

The primary data in this research was obtained by questionnaires and interviews on the passengers. The Likert scale of 1-5 was used as the instrument in this research. The Likert scale is used to measure the attitude, opinion and perception of someone or a group of people concerning a social phenomenon (Sugiyono, 2013). The Likert scale is also used to measure the level of agreement or disagreement of a respondent towards a series of statements about an object (Istijanto, 2006).The step taken after collecting the sample and obtaining the questionnaire data from the users of the public transportation was analyzing the data with the PLS method and the smartPLS software was used in this research.

The PLS is a statistical technique that studies the correlation between two variables or more and is able to handle many response variables as well as explanatory variables simultaneously (Geladi and Kowalski, 1986).According to Ramzan and Khan (2010), the PLS is a predictive technique that is able to handle many independent variables, although the multicollinearity occurs among them. Besides, the PLS is a regression method used to identify the factors which are the combinations of the X variables as the explanatory ones and the Y variables as the responses (Tabolt, 1997).

The PLS has two indicator models, namely the reflective indicator model and the formative indicator model (Hidayat, 2018). The reflective model reflects that each indicator is the measurement of error imposed on the latent variable (Henseler, Ringle & Sinkovicks, 2009). The formative correlation model is the correlation of causality originated from the indicators towards the latent variables. The steps in analisis with PLS are designing the structural model (inner model), designing the measurement model (outer model), the data collection and assessment, the estimation of the PLS-SEM path model, the evaluation of the measurement model, the evaluation of the structural model, the advanced analysis of the PLS-SEM and the interpretation of the result and the conclusion drawing (Hair et al., 2013).

## III. RESULTS AND DISCUSSIONS

### 3.1 The Variable Determination Concept

The city transportation can at least provide safety, security, comfort, affordability (fare), inclusiveness (for passengers with disabilities) and orderliness based on the Minimum Standard of Service (The Ministry of Transportation, 2015).

The factors influencing the process of choosing the mode of transportation are the characteristic of the traveller, the characteristic of the travel and the characteristic of the transportation system (Tamin, 1997). The

factors of speed, travel distance, comfort, enjoyment, reliability, mode availability, size of the city as well as the age, composition and socioeconomic status of the traveller are the factors influencing the process of choosing the mode (Bruton, 1975). The step of choosing the mode is a process of transportation plan that intends to determinethe travel load or ascertain the number of people and/or goods (in terms of proportion) that will use or choose various transportation modes available for serving a certain origin in the interest of several certain travel intentions as well (Miro, 2002).

According to Radam (2020), the things that need to be heeded in order to improve the feeder transportation service are the transportation system, the characteristic of the movement, the sociodemographic factor of the driver, the performance of the vehicle and the stop facility. Several attributes in performing the assessment of the transportation mode's service are time, fare, safety, enjoyment, comfort and expedition service (Manheim, 1979), while Schumer (1974) identified the attributes of service level as speed, safety, capacity, frequency, orderliness, intermodal link, responsibility, comfort and being economical.

### 3.2 The Determination of the Variables

The variables used in this research are the endogenous variable and the exogenous variable. The endogenous variable in this research is the passengers' desires factor. Whereas the exogenous variables in this research are The Characteristic of The Transportation System (X1), The Characteristic of The Travel (X2) and The Characteristic of The Traveller (X3) as seen on the Table 1.

**Table 1.** Variable, IndicatorandStatement Description

| Variable | Indicator | Statement |
|---|---|---|
| **The Characteristic of The Transportation System (X1)** | | |
| Transit Facility | X1.01 | The availability of the transit facility |
| | X1.02 | The location of the transit facility |
| Operational Assurance | X1.03 | The punctuality of the public transportation |
| Waiting Time | X1.04 | The waiting time of the public transportation |
| Integrated | X1.05 | The integration of the public transportation |
| Safe | X1.06 | The safety of the public transportation |
| Comfortable | X1.07 | The comfort of the public transportation |
| Capacity | X1.08 | The capacity of the public transportation |
| Clean | X1.09 | The cleanliness of the public transportation |
| Convenient | X1.10 | The practical payment |
| Well-Maintained | X1.11 | The transportation is roadworthy |
| Separated | X1.12 | Having a dedicated lane |
| Inclusiveness | X1.13 | The transportation is child-friendly, pregnant woman-friendly, people with disabilities-friendly |
| Insurance | X1.14 | The safety assurance is provided |
| Facility | X1.15 | The transportation's equipments function well (Hazard warning lights, emergency window glass breaker, fire extinguisher, safety belt) |
| **The Characteristic of The Travel (X2)** | | |
| Destination Route | X2.1 | The transportation has routes to desired destinations |
| Service Time | X2.2 | The service time of the city transportation |
| Fast | X2.3 | Arriving at the destination much faster |
| **The Characteristic of The Traveller (X3)** | | |
| Coverage | X3.1 | The city transportation's service coverage is vast |
| Vehicle Ownership | X3.2 | Vehicle ownership |
| Skilled | X3.3 | The driver is professional |
| Smoke | X3.4 | The driver does not smoke |
| Evident | X3.5 | The driver's identity |
| Status | X3.6 | The driver's status as a civil servant |
| Cautious | X3.7 | The driver does not drive recklessly |
| Healthy | X3.8 | The driver's health is always controlled |

### 3.3 The PLS Analysis

In the process of the initial analysis using the SmartPLS software, the first thing that was done was to reduce the loading factor score of each indicator in the reflective model (the characteristic of the traveller) in which the loading factor score > 0.7. If the loading factor score was less than 0.7 then it had to be reduced and recalculated again with PLS algorithm so that the loading factor score in the reflective model indicator would be

more than 0.7. The bootstrapping was then done in the formative model indicator (the characteristic of the transportation system and the characteristic of the travel) in which the P-Value score was less than 0.05. If the P-Value score was more than 0.05 then it had to be reduced and recalculated again with bootstrapping so that the P-Value score would be less than 0.05.

The complete results of the factor model test for the passengers' desires in using the public transportation can be seen on the Table 2 and the Table 3.

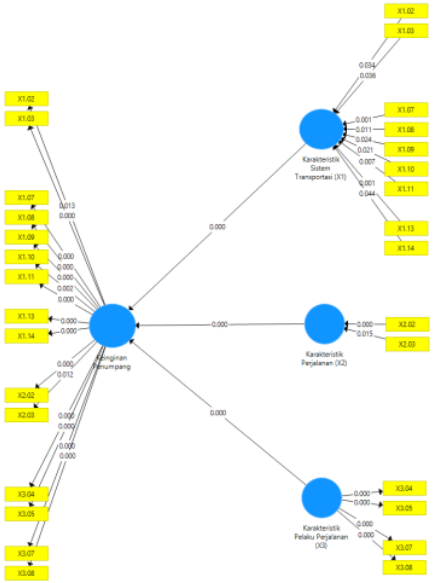

Image 1.The Final PLS Analysis of the Intracity Passengers

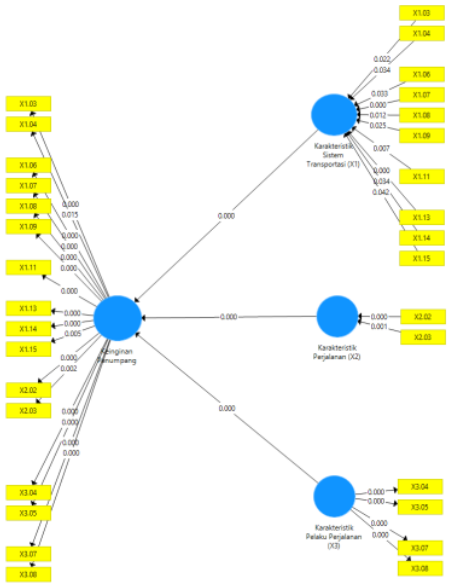

Image 2. The Final PLS Analysis of the Intercity Passengers

**Table 2.**The Final PLS Evaluation Analysis Result of the Intracity Passengers

| Criteria | Description | Indicator | Score | Status |
|---|---|---|---|---|
| The Reflective Measurement Model on the Characteristic of the Traveller | | | | |
| Convergent Validity | Loading Factor> 0,700 | X3.04 | 0,732 | Valid |
| | | X3.05 | 0,734 | Valid |
| | | X3.07 | 0,753 | Valid |
| | | X3.08 | 0,769 | Valid |
| Reliability | Cronbach's Alpha> 0,700 | X3 | 0,736 | Reliable |
| | AVE> 0,500 | X3 | 0,558 | Reliable |
| | Composite Reliability> 0,700 | X3 | 0,835 | Reliable |
| Discriminant Validity | CrossLoading Factor Indicator >Its Respective Latent Values | X3.04 | 0,732 > 0,612 | Valid |
| | | X3.05 | 0,734 > 0,557 | Valid |
| | | X3.07 | 0,753 > 0,598 | Valid |
| | | X3.08 | 0,769 > 0,663 | Valid |
| The Formative Measurement Model on the Characteristic of the Transportation System and the Characteristic of the Travel | | | | |
| Significance of Weights | P- Value< 0,05 | X1.02 | 0,034 | Significant |
| | | X1.03 | 0,036 | Significant |
| | | X1.07 | 0,001 | Significant |
| | | X1.08 | 0,011 | Significant |
| | | X1.09 | 0,024 | Significant |
| | | X1.10 | 0,021 | Significant |
| | | X1.11 | 0,007 | Significant |
| | | X1.13 | 0,001 | Significant |
| | | X1.14 | 0,044 | Significant |
| | | X2.02 | 0,000 | Significant |
| | | X2.03 | 0,015 | Significant |

| | | | | |
|---|---|---|---|---|
| | | X1.02 | 1,756 | No Multicol |
| | | X1.03 | 1,437 | No Multicol |
| | | X1.07 | 2,153 | No Multicol |
| | | X1.08 | 1,425 | No Multicol |
| | | X1.09 | 1,526 | No Multicol |
| Multicollinearity | VIF < 5 | X1.10 | 1,951 | No Multicol |
| | | X1.11 | 1,729 | No Multicol |
| | | X1.13 | 1,486 | No Multicol |
| | | X1.14 | 1,335 | No Multicol |
| | | X2.02 | 1,721 | No Multicol |
| | | X2.03 | 1,345 | No Multicol |

**Table 3.**The Final PLS Evaluation Analysis Result of the Intercity Passengers

| Criteria | Description | Indicator | Score | Status |
|---|---|---|---|---|
| The Reflective Measurement Model on the Characteristic of the Traveller | | | | |
| Convergent Validity | Loading Factor> 0,700 | X3.04 | 0,727 | Valid |
| | | X3.05 | 0,783 | Valid |
| | | X3.07 | 0,762 | Valid |
| | | X3.08 | 0,771 | Valid |
| Reliability | Cronbach's Alpha> 0,700 | X3 | 0,758 | Reliable |
| | AVE> 0,500 | X3 | 0,580 | Reliable |
| | Composite Reliability> 0,700 | X3 | 0,846 | Reliable |
| Discriminant Validity | Cross Loading Factor Indicator >Its Respective Latent Values | X3.04 | 0,727 > 0,622 | Valid |
| | | X3.05 | 0,783 > 0,619 | Valid |
| | | X3.07 | 0,762 > 0,612 | Valid |
| | | X3.08 | 0,771 > 0,675 | Valid |
| The Formative Measurement Model on the Characteristic of the Transportation System and the Characteristic of the Travel | | | | |
| Significance of Weights | P- Value< 0,05 | X1.03 | 0,022 | Significant |
| | | X1.04 | 0,034 | Significant |
| | | X1.06 | 0,033 | Significant |
| | | X1.07 | 0,000 | Significant |
| | | X1.08 | 0,012 | Significant |
| | | X1.09 | 0,025 | Significant |
| | | X1.11 | 0,007 | Significant |
| | | X1.13 | 0,000 | Significant |
| | | X1.14 | 0,034 | Significant |
| | | X1.15 | 0,042 | Significant |
| | | X2.02 | 0,000 | Significant |
| | | X2.03 | 0,001 | Significant |
| Multicollinearity | VIF< 5 | X1.03 | 1,413 | No Multicol |
| | | X1.04 | 1,385 | No Multicol |
| | | X1.06 | 1,452 | No Multicol |
| | | X1.07 | 2,181 | No Multicol |
| | | X1.08 | 1,416 | No Multicol |
| | | X1.09 | 1,551 | No Multicol |
| | | X1.11 | 1,707 | No Multicol |
| | | X1.13 | 1,488 | No Multicol |
| | | X1.14 | 1,349 | No Multicol |
| | | X1.15 | 1,354 | No Multicol |
| | | X2.02 | 1,761 | No Multicol |
| | | X2.03 | 1,330 | No Multicol |

The analysis results on the Table 2 show that after the PLS analysis had been done, there were fifteen indicators that were relevant from the total twenty-six initial indicators. Whereas the analysis results on the Table 3 show that there were sixteen indicators that were relevant from the total twenty-six initial indicators after the PLS analysis had been done.

## IV. CONCLUSION

Based on the results of the data treatment and analysis, there are several factors that must be heeded in order to fulfill the passengers' desires in using the intracity and the intercity public transportation in Banjarmasin:

1. The factors influencing the intracity transportation passengers' desires in each variable, namely (1) the characteristic of the transportation system with the indicators of using the public transportation if the location of the transit facility is close to the residents, the public transportation provides comfort, the practical payment

system, the transportation vehicles are roadworthy and the transportation vehicles are not harmful to children, pregnant women and people with disabilities, (2) the characteristic of the travel with the indicators of using the public transportation if the public transportation fulfills the needed travel time (morning, noon, afternoon, evening and holidays) and (3) the characteristic of the traveller with the indicators of using the public transportation if the driver does not smoke, the driver's identity is available, the driverdoes not drive recklessly and the driver's health is always controlled.

2. The factors influencing the intercity transportation passengers' desires in each variable, namely (1)the characteristic of the transportation system with the indicators of using the public transportation if the public transportation provides comfort, the transportation vehicles are roadworthy and the transportation vehicles are not harmful to children, pregnant women and people with disabilities, (2) the characteristic of the travel with the indicator of using the public transportation if the public transportation fulfills the needed travel time (morning, noon, afternoon, evening, and holidays) and (3) the characteristic of the traveller with the indicators of using the public transportation if the driver does not smoke, the driver's identity is available, the driver does not drive recklessly and the driver's health is always controlled.

3. There is a desire indicator of both intracity and within-province intercity public transportation passengers in Banjarmasin that does not exist in the Minimum Standard of Service, namely the practical payment system. Whereas there are indicators in the Minimum Standard of Service that have not become priority by the users, namely the passenger ticket and the luggage tag.

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