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.*

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.
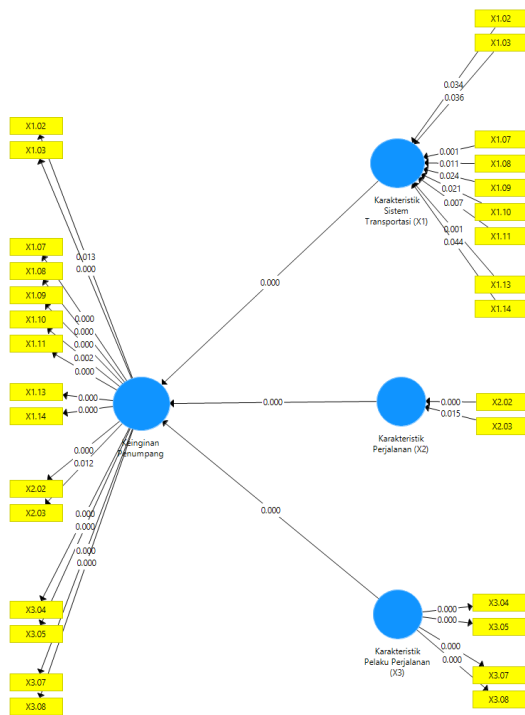

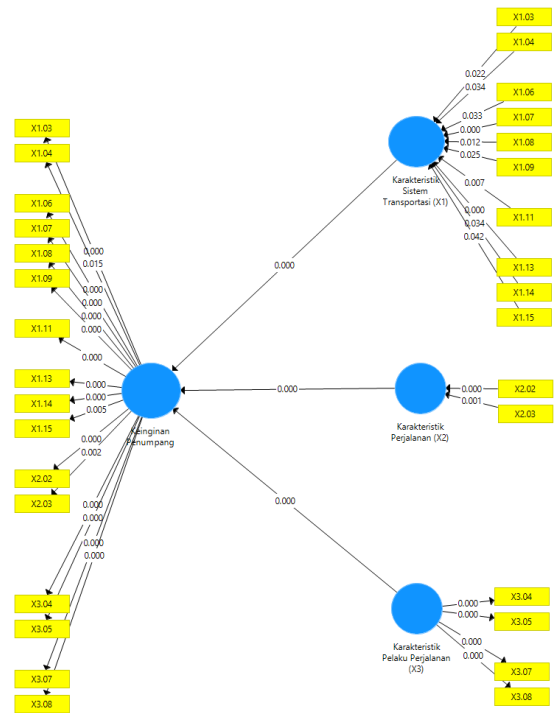Image 1.The Final PLS Analysis of the Intracity Passengers

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

Criteria	Description	Indicator	Score	Status
Multicollinearity	VIF < 5	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
		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		Valid
		X3.05		Valid
		X3.07	0,727 > 0,622	Valid
		X3.08	0,783 > 0,619	Valid
			0,762 > 0,612	
			0,771 > 0,675	
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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