MOTIVATION TO USE PRIVATE TRANSPORTATION: CASE STUDY IN JABODETABEK

Alex Iskandar Munaf ¹⁾, Wiwik Rachmarwi ²⁾, Amanda Setiorini ³⁾, Dety Nurfadilah ⁴⁾ *

^{1,4} Sekolah Tinggi Manajemen IPMI. Jalan Rawajati Timur I/1, Kalibata, Jakarta Selatan, DKI Jakarta, 12750, Indonesia.

^{2,3} Fakultas Ekonomi, Universitas Krisnadwipayana. Kampus Unkris Jatiwaringin, Pondok Gede, Kota Bekasi, Jawa Barat, 13077, Indonesia.

*E-mail: ⁴dety.nurfadilah@ipmi.ac.id

Abstrak

Kemacetan lalu lintas di Indonesia dinilai lebih parah dibandingkan negara tetangga lain, seperti Malaysia dan Singapura. Menyikapi hal itu, Pemerintah saat ini sedang membangun LRT dan MRT dengan maksud untuk mengurangi jumlah transportasi pribadi. Namun studi terkait motivasi internal masyarakat dalam menggunakan transportasi pribadi di Indonesia masih sangat terbatas dan perlu kajian lebih lanjut agar dapat memberikan wawasan yang baik bagi pembuat kebijakan dan praktisi. Oleh karena itu, penelitian ini bertujuan untuk mengetahui faktor-faktor yang mempengaruhi motivasi masyarakat menggunakan transportasi pribadi. Penelitian ini menggunakan pendekatan kuantitatif melalui survei, 151 data dikumpulkan melalui media online dan dianalisis menggunakan regresi berganda dimana model harus memenuhi uji validitas, reliabilitas, dan asumsi klasik yang dipersyaratkan. Hasil penelitian menunjukkan bahwa persepsi kegunaan dan nilai yang dipersepsikan berkorelasi positif dengan motivasi masyarakat dalam menggunakan kendaraan pribadi. Penelitian ini bertujuan untuk memperluas literatur dengan hanya menggali faktor internal terhadap transportasi pribadi. Temuan ini juga diharapkan dapat menjadi acuan bagi pembuat kebijakan dan praktisi untuk membuat strategi prioritas guna mengurangi kemacetan di Indonesia.

Kata kunci: transportasi pribadi, persepsi kemudahan penggunaan, persepsi nilai, persepsi risiko, persepsi kegunaan

Abstract

The traffic congestion in Indonesia is considered worse compare to other neighbours country, such as Malaysia and Singapore. In response to that, Government is currently building LRT and MRT with the intention to reduce the private transportation. However, the study related to the internal motivation of people to use private transportation in Indonesia is very limited and need further examination in order to provide good insights for policy maker and practitioners. Thus, this study is aims to investigate factors that influence people motivation to use private transportation. The study employed quantitative approach through survey, 151 data were collected through online tools and analysed used multiple regression in which the model should fulfilled the required validity, reliability, and classical assumption test. The result showed that perceived usefulness and perceived value have positive correlation with people's motivation to use private transportation. This study is intent to expand the literature by only exploring internal factors towards private transportation. The finding also is expected to give references for policy maker and practitioners to make a prioritize strategy in order to reduce traffic in Indonesia.

Keywords: private transportation, perceived ease of use, perceived value, perceived risk, perceived usefulness

INTRODUCTION

Traffic congestion is a situation of stagnation caused by obstruction of vehicle mobility. Many traffic congestion occurs in big cities, such as DKI Jakarta, Semarang, Bandung, Surabaya, Makassar, Medan, especially those that do not have good or inadequate public transportation. There could also be an imbalance between road needs and population density. To reduce the traffic congestion problem in DKI Jakarta, the Provincial Government of DKI Jakarta is handling traffic by creating new and convenient mode of transportation with the purpose to increase the high number of people to use public transportation in the future. The government is currently starting to build Mass Rapid Transit (MRT), Light Rail Transit (LRT), and the Jakarta-Bandung fast train. These projects are Indonesia's future means of transportation. In fact, not only in DKI Jakarta, it is hoped that this project will target other big cities. In order for this project to be effective in breaking down congestion, the government will integrate the transportation, so that it can reduce the level of traffic and reduce the use of private cars in Jabodetabek.

However, changing the mindset and habits of the people of DKI Jakarta, shifting from private to public transportation is complicated. Based on the data provided by Badan Pusat Statistik (2019), the number of motorbike increased significantly from 7.773.511 in 2017 to 8.194.590 in 2019. It showed that many people in DKI Jakarta are still depend on motorbikes because it is faster and more time efficient to get through traffic jams. Another issue is some people also have

more than one private cars with different car number plat. So, they still can use their own private transportation every day.

The external factors that affect people to use private transportation has been discussed by many scholars. Kurniawan (2017) stated that one of the main factors that caused people to use private transportation is poor quality of available public transportation. Tamaela (2015) agreed that available public facilities have not met the criteria, especially comfortless. The high usage of private transportation is also supported by the industry that offer new vehicle with a low down-payment (DP).

There are extensive research about factors that influence people to use public transportation (Burian et al., 2018; Sánchez-Atondo., 2020; Borhan et al., 2014); electric transportation (Liao et al., 2017). However, the previous study that discuss about internal factors of people to use private transportation is very limited. Therefore, this study aims to fill the gap between the practice related to increasing demand to buy private transportation, government support in promoting more sustainable infrastructure and the academic study. The objective of this study is to analyse the factors that influence people attitude and motivation to use private transportation.

The finding of this research is expected to deepen the understanding about internal factors that cause the increasing number of private transportation and provide an insight for practitioners on how to develop the strategy to tackle this issue. The government also play an important role to make sure that all parties

are in the same path to reduce the traffic congestion.

LITERATURE REVIEW

The Relationship between Perceived Usefulness (PU) and the People's Motivation to Use Private Transportation

Perceived usefulness (PU) is described as how people perceive the improvement in new technology will improve their work performance (Mathwick et al., 2001). By connecting this definition to the context of this study, Sumaedi et al., (2016) stated that people are likely to use private transportation when they feel that it is useful to support their activities. Based on the discussion, the hypothesis is as follows: H₁: perceived usefulness will be positively related to motivation to use private transportation.

The Relationship between Perceived Ease of Use (PEOU) and the People's Motivation to Use Private Transportation

Perceived ease-of-use (PEOU) has been described by Alshibly (2014) as how much people think that using a product or service do not cause any problem or will make them free from high effort. With the advantages of technology in this era, especially transportation, everything seems more effortless. In the past, some people need to walk to the open street to reached a taxi, or using the crowded train with no air conditioner, etc. Although it still needs to have an effort to drive in our own (but, with a driver it will be a zero-effort), but it will be more comfortable and flexible.

In related to private transportation, it show how people feel easily to use transportation. Based on the discussion, the hypothesis is as follows: H₂: perceived

ease of use will be positively related to motivation to use private transportation.

The Relationship between Perceived Risk (PR) and the People's Motivation to Use Private Transportation

The term of perceived risk (PR) has been discussed by (Dowling & Staelin, 1994) as how people perceive that using a product or service will make them suffer from a loss in order to gain an outcome. In the context of transportation, risk is more related to fear of crime and personal security where the passengers do not familiar with the surrounding places (Cordner, 2010). His study also mentioned that the level of perceived of risk is related to the characteristic of respondents which include age, ethnicity, education, and gender. Based on the discussion, the hypothesis is as follows: H₃: perceived risk will be positively related to motivation to use private transportation.

The Relationship between Perceived Value (PV) and the People's Motivation to Use Private Transportation

Sumaedi et al., (2016) considered perceived value (PV) as how people perceive a product or service will give benefit rather than the sacrifice made to obtain the product or services. According to Lai and Chen (2011), the perceived of value in the context of private transportation is how people compare the benefit they can get from using private car and the sacrifice they have done. Based on the previous study conducted by Wen et al. (2005), people tend to choose product/services with full benefit. Based on the discussion, the hypothesis is as follows: H₄: perceived value will be

positively related to motivation to use private transportation.

METHODS

Research Design

This study analyses the internal factors (perceived usefulness, perceived ease of use, perceived risk and perceived value) on people motivation to use private transportation. In order to maximize our research with the respondents, we are going to implement a quantitative approach. We choose the quantitative approach because we are going to use questionnaires that involves numerical analysis as our measurement.

Population and Sample

The sampling technique used in this study is probability sampling where the sample in this study is the users of private transportation in Jabodetabek. They are considered appropriate as a sampling frame for this research because those areas are considered as big city and portray for approximately 17% of the total population in Indonesia. The sample size should follow the 10-times rule (Hair et al., 2014). As this study use fifteen (15) question with five variables, then the minimum sample size is 150.

Data Collection Method

A survey was conducted in order to determine people attitude and motivation to use private transportation. Data collection was conducted from mid of May until Mid of July, 2020. The questionnaires were distributed to 250 respondents, but unfortunately there were only 151 data valid.

Data Analysis Method

This research will use SPSS to run the data. The multiple regression model in this study is as follow:

$$Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4$$

Where:

Y = Motivation

B_0 = Constant

B_1 = Regression coefficient

X_1 = Perceived ease of use

B_2 = Regression coefficient

X_2 = Perceived usefulness

B_3 = Regression coefficient

X_3 = Perceived risk

B_4 = Regression coefficient

X_4 = Perceived value

In analysing the factors that influence people motivation to use private transportation, we began the analysis by gathering the data, then we used frequency distribution to check the respondent's profile, testing for valid and reliability test, classical assumption, coefficient correlation, multiple regression, and anova.

RESULT AND DISCUSSION

Demographic Information

Based on Table 1, majority of respondents were female with 66,2%, while men were 33,8%. In terms of age range, majority of respondents were in the 40 – 46 age range (43.0%), followed by 33 – 39 age range (40,4%), while the least respondents were in the age range 18 – 25 (2,6%). In terms of education, majority of respondents were undergraduate (47%), followed by master (32,5%), while the least respondents were doctoral (10,6%) and SMA/SMK (9,9%).

Then, in terms of income, majority of respondents have received

Rp10.000.001 - Rp15.000.000 per month (53%), followed by Rp5.000.001 - Rp10.000.000 (34,4%) and Above Rp15.000.001 (12,6%). In terms of occupation, majority of them were private employee (44,4%), followed by government/public employee (43%), while the least respondents were teacher/lecturer/instructor (4,6%) and students (7,9%). In terms of frequency in using private transportation, majority of them answered everyday (60,3%), while others answered 1 – 2 times per week (25,2%) and 3 – 6 times per week (14,6%).

Classical Assumption Test

Classical assumption test is a compulsory robust test before testing the hypothesis. It consist of validity, reliability, normality, multicollinearity, and heteroscedasticity test as follows:

Validity and Reliability Test

Validity and reliability test is a compulsory robust test. According to (Sugiyono, 2013), validity test should compare the calculated r numbers and r table. If the calculated r number is > r table, it is considered as valid and vice versa. In addition, if Cronbach alpha value > 0.6, it is considered as reliable. Based on table 2, the study were valid and reliable.

Normality Test

According to Santoso (2010), normality test is used to check whether or not the data distribution normal. Based on the test of Kolmogorov-Smirnov, if the value of p greater than 0.05 (5%), then the data is normally distributed, while if the value of p less than 0.05 (5%), then the data is not normally distributed. According to Table 3, p-value is 0.200 greater than

0.05. Thus, it can be concluded that the study has a normally distributed data.

Multicollinearity Test

Multicollinearity test is used to determine the correlation between variables in the same model. A good model should have no correlation between independent variables (Gani & Amalia, 2015). If VIF is higher than 10, it showed that the study has not passed collinearity test, while VIF lower than 10 showed that the study passed the collinearity test. Based on table 5, VIF value of Perceived ease of use is 3,216; VIF value of perceived usefulness is 3,338; VIF value of perceived risk is 3,770; VIF value of perceived value is 3,109. Thus, we can conclude that the study does not have problem in collinearity test.

Heteroscedasticity Test

According to Ghazali (2007), heteroscedasticity test is used to check the regression model residual variance inequality from one observation to another observation (Ghozali, 2007). Using the Spearman test method which is carried out by correlating the absolute value of the residuals with each of the independent variables (X_1 , X_2 , X_3 , and X_4). Based on Table 5, the study has passed heteroscedasticity test.

Multiple Regression Test

According to Table 6, here is the multiple regression equation in this study:

$$Y = 12,301 - 0,017 + 0,006 - 0,093 + 0,123$$

Hypothesis Testing

Based on Table 6, the results of the partial test (T-test) were obtained than

perceived usefulness ($T = 0,079$; $0,037 < 0,05$); and perceived value ($T = 1,884$; $0,041 < 0,05$) were found to have significant effect on people's motivation to use private transportation.

Perceived usefulness refers to how people believe that using private transportation would improve their performance. In this context, people's motivation to use private transportation is merely because they want to have a convenience mode of transportation where they could go from one place to another place. The result also showed that by using public transportation, they usually need to take more than one transportation where it is not suitable for those who prefer more convenience mode of transportation.

In related to perceived value, people believe that private transportation has an ability to meet their needs and expectations compared to public transportation. This is also having relationship with the convenience way in using private transportation.

Simultaneous test results (F-test) with SPSS processing obtained a sig value ($0,045 < 0,05$, or $F \text{ count } (2,586) > F \text{ table } (2,47)$) so there is an effect of variables X1, X2, X3, and X4 simultaneously on variable Y.

Table 1. Demographic Respondents

Category	Frequency	Percentage	Category	Frequency	Percentage
1. Gender			4. Occupation		
Male	51	33,8	Students	12	7,9
Female	100	66,2	Private employee	67	44,4
2. Age			Government/Public employee	65	43,0
18 - 25	4	2,6	Teacher/lecturer/instructor	7	4,6
26 - 32	10	6,6	5. Income		
33 - 39	61	40,4	Rp5.000.001 -	52	34,4
40 - 46	65	43,0	Rp10.000.000		
Above 47	11	7,3	Rp10.000.001 -	80	53,0
3. Education			Rp15.000.000		
SMA/SMK	15	9,9	Above Rp15.000.001	19	12,6
Undergraduate	71	47,0	1. Frequency		
Master	49	32,5	1 - 2 times per week	38	25,2
Doctoral	16	10,6	3 - 6 times per week	22	14,6
			Everyday	91	60,3

Source: the data is processed by author (2020)

Table 2. Validity and Reliability

Variables	Reliability Statistics	
	Cronbach's Alpha	N of Items
Perceived ease of use	0,929	3
Perceived usefulness	0,852	3
Perceived risk	0,829	3
Perceived value	0,812	3

Source: the data is processed by author (2020)

Table 3. Normality

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
N		160
Normal Parameters ^{a,b}	Mean	0,0000000
	Std. Deviation	1,60547717
Most Extreme Differences	Absolute	0,060
	Positive	0,043
	Negative	-0,060
Test Statistic		0,060
Asymp. Sig. (2-tailed)		.200 ^{c,d}
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Source: the data is processed by author (2020)

Table 4. Multicollinearity

Model	Coefficients ^a			t	Sig.	Collinearity Statistics Tolerance	VIF
		Standardized Coefficients Beta					
1	(Constant)	12,301	0,656	18,754	0,000		
	Perceived ease of use	-0,017	0,060	-0,040	0,780	0,311	3,216
	Perceived usefulness	0,006	0,074	0,011	0,937	0,300	3,338
	Perceived risk	-0,093	0,079	-0,182	0,239	0,265	3,770
	Perceived Value	0,123	0,065	0,264	0,061	0,322	3,109

a. Dependent Variable: Motivation

Source: the data is processed by author (2020)

Table 5. Heteroscedasticity

			Correlations				ABS_RES
			Perceived ease of use	Perceived usefulness	Perceived risk	Perceived Value	
Spearman's rho	Perceived ease of use	Correlation	1,000	.802**	.603**	.570**	0,002
		Coefficient					
		Sig. (2-tailed)		0,000	0,000	0,000	0,977
	Perceived usefulness	N	160	160	160	160	160
		Correlation	.802**	1,000	.609**	.516**	0,056
		Coefficient					
		Sig. (2-tailed)	0,000		0,000	0,000	0,482
	Perceived risk	N	160	160	160	160	160
		Correlation	.603**	.609**	1,000	.780**	-0,068
		Coefficient					
		Sig. (2-tailed)	0,000	0,000		0,000	0,395
	Perceived Value	N	160	160	160	160	160
		Correlation	.570**	.516**	.780**	1,000	-0,025
		Coefficient					
		Sig. (2-tailed)	0,000	0,000	0,000		0,756
	ABS_RES	N	160	160	160	160	160
		Correlation	0,002	0,056	-0,068	-0,025	1,000
		Coefficient					
		Sig. (2-tailed)	0,977	0,482	0,395	0,756	
		N	160	160	160	160	160

** . Correlation is significant at the 0.01 level (2-tailed).

Source: the data is processed by author (2020)

Table 6. Multiple Regression Analysis

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.153 ^a	0,023	-0,002	1,626	
a. Predictors: (Constant), Perceived Value, Perceived ease of use, Perceived usefulness, Perceived risk					
b. Dependent Variable: Motivation					
Coefficients ^a					
Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Beta		
		Std. Error			
1	(Constant)	12,301	0,656	18,754	0,000
	Perceived ease of use	-0,017	0,060	-0,040	0,780
	Perceived usefulness	0,006	0,074	0,011	0,037
	Perceived risk	-0,093	0,079	-0,182	0,239
	Perceived Value	0,123	0,065	0,264	0,041
a. Dependent Variable: Motivation					
Source: the data is processed by author (2020)					

CONCLUSION

The objective of this study is to investigate internal factors that influence people to use private transportation. This research shows that perceived usefulness and perceived value have significant effect on people's motivation to use private transportation. Perceived usefulness related to performance and perceived value related to needs and expectations.

Meanwhile, perceived ease of use and perceived risk don't have significant effect on people's motivation to use private transportation. Perceived ease of use related to efforts and/or problems and perceived risk related to personal security.

This shows that the use of private transportation is still considered to provide benefits and greater value than public transportation. For example, they do not follows: 1) sample size is only for people domicile in Jakarta, Bogor, Depok, Tangerang, and Bekasi. The sample size is small compared to the population in Indonesia. Therefore, future study need to add mode sample size in order to get more generalized result. 2) this study employed questionnaire. In other to get in-depth analysis, the future study might need to expand it using interviews.

PRACTICAL IMPLICATION

Understanding this result will help local government to design affordable public transportation arrangement. So far the government has only provided very basic public transportation services and has not considered supporting factors, such as comfort. Especially in the midst of the current COVID-19 pandemic, health factors need important attention without neglecting other factors, including comfort.

have to change modes of transportation, do not waste time waiting, not being in the crowd, lowering the risk of losing goods (lost or left behind). Thus, they can focus more on the work or activity to be carried out, and not run out of resources (time and effort) for the hassles that can be avoided.

Regarding this COVID-19 pandemic, in which people need to stay away from one another, private transportation helps by enhance perceived usefulness—support activities without being too close to others, perceived value—they got benefit from staying healthy even in the crowd (of people who wants to get work), perceived ease-of-us—free of being in the crowd, and lowering perceived risk—minimize the possibility if being infected or spreading the virus.

This study has some limitations as f

In addition to that, the practitioners in transportation industry might get benefit from this finding where they could develop their business strategy to attract more people to use public transportation.

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