

# The Intention of Using City Transportation During the Covid-19 Pandemic in Palembang

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## ABSTRACT

This study purpose to determine the public's interest in using transportation during the Covid-19 Pandemic in Palembang City. This research is also intended to provide information on how people behave in the selection of transportation means during this Pandemic so that it can be information for public transport entrepreneurs and related authorities for the development of strategies to market public transportation in the community. The analytical technique used is Multinomial Logistic Regression. Intention of the transportation is divided into three categories, namely non-online public transportation, online public transportation, and private vehicles. The independent variables are the perception of the risk of Covid-19, the perception of value by consumers, and the consumer's perception of behavior control. The finding indicate that it is the perception of value by consumers that is significant and influences the public to be more interested in the use of private vehicles rather than public transportation.

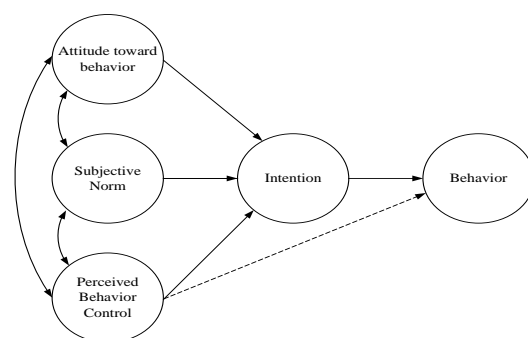
**Keywords:** covid perceived risk, consumer perception of value, perceived behavior control

## 1. INTRODUCTION

Consumer behavior shows how a consumer acts on the product used, starting from when he realizes he needs the product until the product is finished being consumed. This means that before the product is consumed, consumers will try to find information about products and brands that suit their needs. Consumers try to filter and process information about the product to be purchased, including the phenomena related to meeting their needs. After consuming the consumer will also have a perception of the product. According to (Ajzen, 1991) a person's behavior is influenced by intentions while the behavior is influenced by three things, namely attitudes toward the behavior (attitude toward the behavior), subjective norms (subjective norms), and perceived behavior control (PBC). the relationship between these variables is called the Theory of Planned Behavior (TPB).

Furthermore according to (Ajzen, 1991) intention is assumed to capture the motivational factors that influence behavior; it is an indication of how hard people are willing to try, how much effort they are planning to put into the behavior. PBC refers to people's perceptions of the ease or difficulty of performing the desired behavior. Attitude refers to the degree to which a person

has a favorable or unfavorable evaluation or judgment of the behavior in question, while subjective norms refer to perceived social pressure to perform or not perform the behavior. Thus attitudes, subjective norms, and perceived control behavior are also motivations for intention. This relationship can be depicted in Figure 1.



**Figure 1** Theory of Planned Behavior (TPB), Ajzen, 1991

The value of using transportation logically is that the most important thing is that it can take its passengers to their destination, plus other fun things, which are fast, safe, cheap, even a social view of themselves that is prestigious. People's desires are the value of consuming the product, it can also be said to be the value of the product. This is in accordance with the notion of value described by (Peter & Olson, 2010) that consumers will get several benefits if they consume a product, but (Pollay, 1996) also states that the concept of value can be meaningfully seen from various aspects. Furthermore, consumers will also weigh the sacrifices that have been made to get the product they need.

Several empirical studies during the current pandemic have observed the impact of the pandemic from several aspects, these studies indicate a change in consumer behavior or a decrease in demand for various products that are considered vulnerable to being a medium of transmission of one of the uses of public transportation. According to (Gkiotsalitis & Cats, 2020) there has been a decrease in the use of public transportation that varies between countries, the greater the spread of covid-19, the greater the decline in the use of public transportation. Research conducted by (Wielechowski, Czech, & Grzęda, 2020) also found a decrease in people's mobility. However, a study by (Timokhina, Ivashkova, Skorobogatykh, Murtuzaliev, & Musatova, 2020) found that private car users changed their behavior by switching to public transportation due to their appreciation for environmental degradation even during this covid-19 pandemic.

In the new normal period where community activities have been carried out almost as before and the economy have turned towards a better direction as well so that community mobility has also become denser than during the lockdown period, thus public transportation facilities have also begun to be widely used which is also

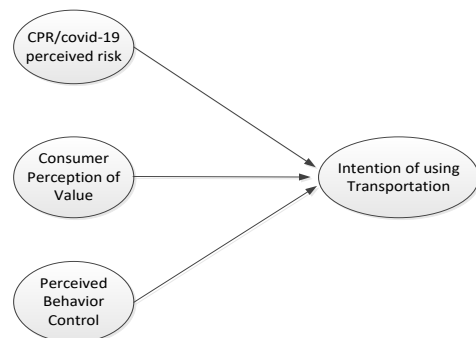
**2. METHODS**

This research was conducted in the city of Palembang with the object of research are users of public transportation not online, online public transportation, and private vehicle users. The variables used are CPR (Covid-19 Perceived Risk), perceptions of the value of the means of transportation used, and perceptions of behavioral control.

The population is the people of Palembang City who use the three types of transportation as mentioned above so that in this study the respondents will be grouped into three groups. The number of population cannot be known, while the sampling technique uses the purposive

applied in the city of Palembang. The transportation used by the people of Palembang City can be divided into two groups, they are public transportation and private vehicles. During this pandemic, online transportation have also become a choice that is quite popular with the public in addition to other products sold online. Meanwhile, in this new normal period, the transmission of the coronavirus continues to haunt so that there is also a phenomenon that people prefer to use their own vehicles, both motorcycle and cars. The choice of public transportation and private vehicles is certainly inseparable from other considerations, namely the time factor, security, and comfort. However, this study, more emphasis will be placed on the context of the covid-19 pandemic.

Furthermore, a framework can be made as in Figure 2 which shows the effect of CPR, consumer perceptions of the value of product use, and perceptions of control over behavior on interest in using transportation. The transportation that will be seen in this study are non online public transportation, online public transportation, and private vehicles. Therefore, the analytical technique used is Multinomial Logistic Regression.



**Figure 2** Research Framework

sampling method with a sample size of 100 people. The determination of the number of samples is based on the provisions made by Roscoe (1975) described by (Sekaran & Bougie, 2016) that the number of samples for multivariate research is several times more than the number of variables used, and preferably greater than ten times the number variable. So, the calculation is 4 multiplied by 25 to add up to 100.

The construct was measured using a semantic differential scale (Semantic Differential). The differential semantic scale is an interval scale that has the same distance between values (Burns & Bush, 2014). The variable perception of the risk of covid-19 or CPR (Covid-19 Perceived Risk) is

people's thoughts on the possibility of being infected in the use of transportation facilities (non-online public transportation, online public transportation, private vehicles) which was adapted from (Yıldırım & Güler, 2020) and using only cognitive indicators. The indicators include the possibility of being infected, the possibility of being infected compared to other people, carrying out health procedures, body resistance, independent isolation, special care, having congenital diseases (comorbid), the elderly are more at risk, the possibility of dying from covid-19.

For the perception of transportation enthusiasts about the value of the vehicle they are interested in during the covid-19 pandemic compared to the sacrifice, the indicators are: risk of infection, safety, comfort, travel time. The perception of control over behavior is how people who use transportation facilities have opinions on conditions that make themselves not infected so they want to use transportation facilities during the covid-19 pandemic adapted from (Ajzen, 1991), so the indicators are: healthy conditions, vehicles are disinfected, drivers have been vaccinated, drivers are healthy, implementation of health protocols, transportation facilities.

**3. RESULTS AND DISCUSSION**

Model Fitting on the output of SPSS software provides information that entering independent variables can provide better accuracy for predicting interest in using public transportation or private vehicles. The model when using only the intercept has a value of -2 Log-Likelihood of 212.324, when the independent variables have been entered, the value drops to 183.604, this condition indicates that the model is correct by including the independent variable. The goodness of Fit shows whether the observation data is by this multinomial logistic regression

The analytical technique used is Multinomial Logistic Regression, which is used because it can show how the influence of independent variables on people's interest in using transportation facilities. The transportation facilities studied were 2 types, they are non-online public transportation (LRT and BRT Transmusi), online public transportation (motorcycles and cars) and private vehicles (motorcycles and cars). Thus the dependent variable in this study is categorical but has nominal scale equivalence. The categories are: private vehicle enthusiasts, acting as a reference category, online public transport enthusiasts (motorcycles and cars), and non-online public transport enthusiasts. The equations are:

$$\begin{aligned} \ln \frac{P (PT Non Online)}{P (Private Vehicle)} &= a + b1CPR + b2CPV \\ &+ b3PBC + e1 \dots \dots \dots (1) \end{aligned}$$

$$\begin{aligned} \ln \frac{P (PT Online)}{P (Private Vehicle)} &= a + b1CPR + b2CPV \\ &+ b3PBC + e2 \dots \dots \dots (2) \end{aligned}$$

model. The requirement to meet whether it is suitable or not is if the Chi-Square significance is greater than 0.05 (5%). The value with the Pearson and Deviance methods shows a greater significance than 5% so that the observation data already matches the model used.

While the value of Pseudo R-Square with the method of Nagelkerke gives the greatest value, then the results of the calculation of this method are used. Thus the role of the independent variable explains the dependent variable by 28.3%.

**Table 1.** Likelihood Ratio Test

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	184.693	1.089	2	.580
CPR	187.200	3.597	2	.166
CPV	209.175	25.572	2	.000
PBC	185.485	1.882	2	.390

The likelihood ratio test as shown in table 1 provides information, that independent variables significantly affect the dependent variable. In table 1, it is known that only the CPV variable is

significant. Furthermore, how the influence of the independent variable on the dependent variable can be seen in table 2.

**Table 2.** Parameter Estimation

		B	Std. Error	Wald	df	Sig.	Exp(B)
online public transport	Intercept	2.901	3.997	.527	1	.468	
	CPRS	.115	.063	3.282	1	.070	1.122
	CPV	-.457	.120	14.504	1	.000	.633
	PBC	.036	.069	.269	1	.604	1.036
non online public transport	Intercept	3.828	3.760	1.037	1	.309	
	CPR	.066	.059	1.225	1	.268	1.068
	CPV	-.440	.116	14.383	1	.000	.644
	PBC	.084	.066	1.637	1	.201	1.088

In line with table 1, table 2 provides more detailed information, each independent variable value is known to affect the dependent variable. The CPV variable in the two models has a significant effect, while CPR and BPC are not significant, therefore these two variables do not need to be analyzed because they have insignificant values.

Table 2 provides information for making equations from the model used :

$$\begin{aligned} \ln \frac{P(\text{PT Non Online})}{P(\text{Private vehicle})} &= 3,828 + 0,066\text{CPR} \\ &- 0,440\text{CPV} + 0,084\text{PBC} \\ &+ e1 \dots \dots \dots (3) \end{aligned}$$

$$\begin{aligned} \ln \frac{P(\text{PT Online})}{P(\text{Private Vehicle})} &= 2,901 + 0,115\text{CPR} \\ &- 0,457\text{CPV} + 0,036\text{PBC} \\ &+ e2 \dots \dots \dots (4) \end{aligned}$$

The equation is interesting to analyze considering that the value of the parameter for the CPV of both equations is negative but significant. This can be explained, which is, if the value of the CPV is small, the probability of using public transportation, both online and not online, is smaller than using a private vehicle. These results indicate that people in a pandemic

**4. CONCLUSIONS**

The results show that people cannot rely on public transportation as a more convenient means

prefer to use private vehicles for work and other purposes in the city of Palembang. This is not caused by concerns or considerations of the risk of contracting covid-19 but rather based on considerations that it is better to use the vehicle.

Using their vehicle means that users can determine for themselves what time they must prepare and depart from, more privacy is maintained, considered more comfortable, and can get to their destination faster. While CPR has no effect, it can indicate that the community is not so worried about getting infected because they have prepared themselves so as not to get infected either by implementing health protocols, preparing nutritious intake so that their immune system is high, having prepared medicines if there are symptoms of infection and there are also The community (although maybe only a small part) has been vaccinated against covid-19 so that they recover faster if they are infected, and finally, the community is willing to self-isolate if infected.

The PBC has no effect, it can be explained that the community may not think that things outside their control which can make it easier for them not to get infected are not under their expectations. So they can't expect much from these variables, the principle that develops in today's society is "take care of yourself" so that it is no longer considered important.

of transportation to use during this pandemic. Public transportation is not considered to have significant value for the community, both for its

benefits and comfort, so the use of private vehicles is considered to be of greater benefit.

It is known by the public that the use of public transportation can provide benefits from the economic aspect, namely increasing the income of the management company and its crew and employees, and no less important is the reduction of air pollution. Maybe people will find it difficult to switch to public transportation or become an endless problem as long as they get more benefits from using public transportation. The solutions that can be proposed are improving facilities, flexibility, ease of access and uninterrupted (integrated) routes, security of public transportation. Restrictions on the purchase and use of private vehicles can also be a solution to the above problems. But also this is not an easy job for the government. It requires planning, large financial resources, high intellectual ability, as well as other related factors that can indeed support it.

#### **AUTHORS' CONTRIBUTIONS**

The difference between this study and other research is to find out how in the current pandemic the perception of being infected with COVID-19, the perceived value of the transportation used, and the control of behavior affect the intention in using transportation, which is self-owned vehicles or using conventional and online public transportation.

The results show that respondents are more interested in using private vehicles than public transportation, and this is influenced by the perceived value of private vehicles. Perceived behavior control to use public transportation does not affect the intention in using their vehicle or public transportation. People during this pandemic have implemented health protocols so they are not worried about contracting COVID-19 when using public

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