

UDC 332

PANDEMIC COVID-19: PUBLIC TRANSPORT OR PRIVATE VEHICLE? A MARKETING PERSPECTIVE

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ABSTRACT

This study is carried out to find out the public's interest in using transportation during the Covid-19 Pandemic in the city of Palembang, and is also intended to provide information on how people behave in the selection of transportation during this Pandemic, so that it can be information for public transportation service providers for the development of strategies to market public transportation in the community. The analytical technique used is Multinomial Logistic Regression. The intention in transportation is addressed to three categories of transportation which are non-online public transportation, online public transportation and private vehicles. The independent variables consist of Perceived of Covid-19 Risk, Consumer Perceived Value and Perceived Behavior Control. The results obtained show that people are still very concerned about the transmission of this virus so that the use of public transportation is not yet the main choice unless the pandemic can be overcome.

KEY WORDS

Perceived of COVID-19 risk, consumer perceived value, perceived behavior control.

The COVID-19 pandemic, which began in China, which has touched almost all countries in the world, was officially declared a pandemic by the WHO in March 2020 (Vingilis et al., 2020) precisely on March 11, 2020 (Gkiotsalitis & Cats, 2020). This highly contagious virus has been able to force humans to change their various habits, especially those related to face-to-face meetings. Many countries in the world apply a lock down so that economic activity declines. However, people in every country cannot just stay at home while various needs need to be met, therefore economic activities still need to be carried out. The Indonesian government has decided that economic activity must continue to overcome various economic setbacks by leading a new normal life (*New Normal*).

The implementation of the new normal also requires the use of transportation facilities to take people to their destination, one of which is public transportation. However, public transportation is very vulnerable to being a place of transmission of this virus, because it accommodates the general public and the seating position is close together. During this pandemic, although the new normal has been implemented, there is a possibility that the number of public transport passengers in general is expected to decline, but the condition of the number of online public transport passengers is not known.

Several studies conducted by several foreign researchers stated that there was a change in people's behavior in many economic activities caused by the Covid-19 pandemic, one of which was the change in people's behavior in using public transportation. As a result of this pandemic, the number of public transport passengers has decreased, so a strategy is needed to overcome it (Tirachini & Cats, 2020). (Tirachini & Cats, 2020) explained that the decrease in demand for public transportation was caused by the reduced number of trips made by the public using public transportation. Thus, it is necessary to take action from the company's management to anticipate transmission by carrying out cleaning, environmental disinfection, and personal protection of the implementing employees (Shen et al., 2020).

Psychologically, it is undeniable that people's fears of being infected with COVID-19 persist both logically and emotionally, this condition makes them stay alert and consciously carry out health protocols. However, there are still some people who do not follow the health protocols with the assumption that they will not get infected because they think their immune systems are strong. This action can endanger other people or can infect other people if it

turns out that they have been infected. Therefore, it is hoped that the community will comply with health protocols on public transport in order to maintain health together (Dzisi & Dei, 2020). For this reason, public transportation and private vehicles used by the community to deliver them to their destination are deemed necessary to have facilities that can prevent transmission, especially public transportation that the driver and crew are in good health and clean from the corona virus.

In Palembang City, with the implementation of the new normal, economic life and community activities have gradually improved. The phenomenon of public awareness of the implementation of health protocols is also the same as described above. In connection with the above, the implementation of the new normal is also applied to public transportation and its users. Until now, transportations used by the community are public transportation and private vehicles. The public transportation currently used by the public is online and non-online, both motorcycle and cars, as well as private vehicles. However, public transportation is still a concern for the community as the easiest place for transmission, so they prefer to use their own vehicles rather than public transportation. Psychologically, both cognitively and emotionally, people are still quite worried about getting infected by using public transportation, so it is not surprising that people choose to use their own vehicles to their destinations.

In this pandemic, the public's assessment of the risks and benefits received is increasingly intense, so that to consume products, people will try to find out the safety of the products and services (especially public transportation) used from the virus. The public is also trying to understand how to kill viruses that are not known to exist with the naked eye so that they are prepared in such a way and apply the correct health protocols. Information processing forms perceptions of what may be accepted, both risks and benefits.

Public opinion on the value of both using public transportation and private vehicles during the pandemic is also a consideration. The context of this value is how the benefits are felt by the community with the sacrifices that have been made. Is it possible with the sacrifice of both energy, time and costs incurred to use transportation (public transportation or private vehicles) in accordance with their safety from covid-19.

For companies providing public transportation services, it is very important to attract public attention and trust in the safety of their public transportation from the corona virus. The company must strictly make regulations for its crew to implement health protocols, maintain personal hygiene and vehicle facilities, the same is also required of passengers. In the current pandemic conditions, of course, public transport managers must understand the behavior or willingness of their consumers who are definitely not infected with this virus because they use their means of transportation.

This condition makes the public transportation business in Palembang City experience a decrease in the number of passengers which in turn has an impact on the company's income decline. Passenger behavior has changed regarding the transmission of the corona virus very quickly, especially in public places where a lot of people gather, one of which is public transportation. For this reason, companies need to understand passenger behavior during the Covid-19 pandemic so that information is obtained to plan and develop marketing strategies during this pandemic.

Therefore, it is also necessary to conduct research that aims to find out what things affect people's intentions to use online public transportation or not, as well as private vehicle users, as well as what factors distinguish people's intentions for the type of transportation they choose. This research is also important because it can see whether the behavior of people who in recent years have preferred private vehicles during this pandemic still has the same behavior or has changed, so that it becomes a very valuable input for companies to redesign their public transportation marketing strategy to the public during this pandemic.

LITERATURE REVIEW

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 the intention while behavior is influenced by three things, namely attitude toward the behavior, subjective norm and perceived behavior control/PBC, The Theory of Planned Behavior explains the relationship between those variables.

Still according to (Ajzen, 1991) intentions are 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 extent to which a person has a favorable or unfavorable evaluation or judgment of the behavior in question, while subjective norms refer to the perceived social pressure to perform or not perform the behavior. Thus attitudes, subjective norms and perceived behavior control are also motivations for intentions.

The value of using transportation logically is that the most important thing is to be able to deliver passengers to their destination, coupled with other fun things, namely fast, safe, cheap, even a social view of themselves that is prestige. All 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 some benefits if they consume a product, however (Pollay, 1996) also stated that the concept of value can mean 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 is a decrease in the use of public transportation which varies between countries, the greater the spread of covid-19, the greater the decrease in the use of public transportation. Research conducted by (Wielechowski, Czech, & Grzęda, 2020) found a decrease in community mobility. However, research 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 this new normal period where community activities have been carried out almost as before and the wheels of the economy have turned towards a better direction as well so that community mobility has also become denser than during the lock down period, thus public transportation facilities have also begun to be widely used. This also applies in the city of Palembang. The transportation used by the people of Palembang City can be grouped into three groups, namely 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 corona virus continues to haunt so that there is also a phenomenon that people prefer to use their own vehicles, both two-wheeled and cars. The choice of public transportation and private vehicles is certainly inseparable from other considerations, namely the time factor, security and comfort. However, in this study, more emphasis will be placed on the context of the COVID-19 pandemic.

Furthermore, a framework can be made as in Figure 1 which shows the effect of CPR, CPV of using products and PBC on intention in using transportation. The transportation that will be examined in this study are non-online public transportation, online public transportation and private vehicles. Therefore, the analytical technique that will be used is Multinomial Logistic Regression.

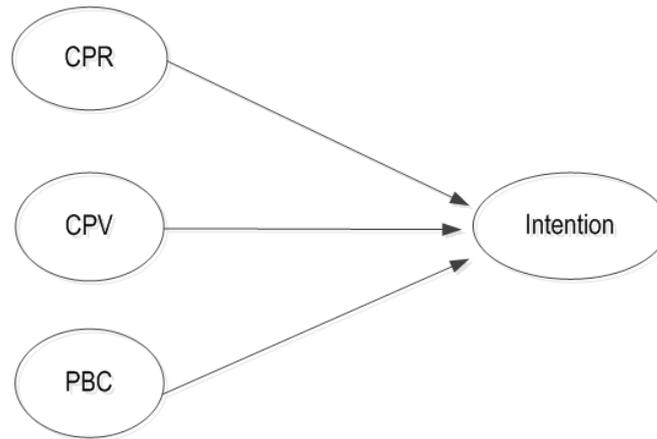


Figure 1 – The conceptual framework

The hypotheses that can be developed based on the background description and literature review are: H1, CPR affects people intention to use transportation, H2, CPV of the transportation category used influences people intention to use transportation, and H3, PBC influence people intention to use transportation

METHODS OF RESEARCH

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

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 sampling technique used purposive sampling method with a sample size of 200 people based on the provisions made by Roscoe (1975) explained by (Sekaran & Bougie, 2016) which is explained by that the number of samples for multivariate studies is several times more than the number of variables used, and preferably greater than ten times the number of variables. So the calculation is 4 multiplied by 50 to add up to 200.

The construct was measured using a semantic differential scale (Semantic Differential) with a value range of 1 to 8. Operational variables consist of perceptions of CPR which is the public's thoughts on the possibility of being infected in the use of transportation facilities (non-online public transportation, online public transportation, private vehicles) adapted from (Yıldırım & Güler, 2020) and the indicators are only taken from the cognitive CPRS indicators. CPV of transportation facilities is the perception of enthusiasts or users of transportation facilities on the value of the vehicle they are interested in during the COVID-19 pandemic compared to sacrifices. For PBC, it is defined as the perception of behavior control is how the public using transportation facilities has an opinion on the conditions that make it easier for them to use transportation facilities during the COVID-19 pandemic without being infected and adapted from (Ajzen, 1991).

The analytical technique used is Multinomial Logistic Regression, whereas the dependent variable is categorical and the independent variable is interval. This analysis technique is used because it will be seen how the influence of independent variables on people's intention in using transportation facilities. The transportation facilities studied are 2 types, namely non-online public transportation (Light Rail Transit/LRT and Bus Rapid Transit/BRT Transmusi), online public transport (motorcycles and cars) and private vehicle (motorcycles and cars). Thus, the dependent variable in this study is categorical but has nominal scale equivalence. The categories are: 1 = private vehicle enthusiasts, act as a reference category; 2 = online public transport enthusiasts (motorcycles and cars); 3 = non-online public transport enthusiasts (Light Rail Transit/LRT and Bus Rapid Transit/BRT Transmusi).

The equations are:

$$\text{Ln} \frac{P(\text{Non Online Public Transport})}{P(\text{Private Vehicle})} = a + b_1\text{CPR} + b_2\text{CPV} + b_3\text{PBC} + e_1 \dots \dots \dots (1)$$

$$\text{Ln} \frac{P(\text{Online Public Transport})}{P(\text{Private Vehicle})} = a + b_1\text{CPR} + b_2\text{CPV} + b_3\text{PBC} + e_2 \dots \dots \dots (2)$$

RESULTS AND DISCUSSION

The data used in this study came from 134 respondents who filled out the questionnaire, it did not meet the target of the previous research plan. This is due to the fact that the process of searching and finding respondents was quite constrained by the implementation of PPKM. Table 1 is called Model Fitting Information. This is an output or output that provides information that by including independent variables can provide better accuracy for predicting interest in using public transportation or private vehicles.

Table 1 – Model Fitting Information

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	285.672			
Final	249.258	36.414	6	.000

The model when using only the intercept has a value of -2 Log Likelihood of 285.672, when the independent variables have been entered, the value drops to 249.258, this condition indicates that the model is correct by including the independent variable.

Table 2 is the Goodness of Fit which is useful to show whether the observation data is in accordance with this multinomial logistic regression model. The condition to meet whether it is suitable or not is if the Chi Square significance is greater than 0.05 (5%).

Table 2 – Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	248.764	250	.510
Deviance	244.864	250	.580

The value with the Pearson and Deviance methods shows a greater significance than 5% so that the observation data already matches the model used.

Table 3 – Pseudo R-Square

Method	Value
Cox and Snell	.238
Nagelkerke	.269
McFadden	.125

Table 3 is information that shows how big the role of the independent variable is. The Pseudo R-Square value with the method from Nagelkerke gives the greatest value, so the results of the calculation of this method are used. Thus, it is known that the role of the independent variable explains the dependent variable by 26.9%. The value with the Pearson and Deviance methods shows a greater significance than 5% so that the observation data is compatible with the model used.

Table 4 – Likelihood Ratio Tests

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	250.061	.803	2	.669
CPR	261.535	12.277	2	.002
CPV	282.948	33.690	2	.000
PBC	255.582	6.324	2	.042

Likelihood ratio test as shown in table 4 provides information, namely what independent variables significantly affect the dependent variable. In table 4 it is known that all independent variables are significant. Furthermore, how the influence of the independent variable on the dependent variable can be seen in table 5 below.

Table 5 – Parameter Estimates

Intention		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Non Online Public Transport	Intercept	-2.120	2.767	.587	1	.444			
	CPR	.120	.046	6.812	1	.009	1.128	1.030	1.234
	CPV	-.441	.100	19.325	1	.000	.644	.529	.783
	PBC	.145	.060	5.899	1	.015	1.156	1.028	1.299
Online Public Transport	Intercept	-2.480	2.896	.734	1	.392			
	CPR	.162	.050	10.608	1	.001	1.176	1.067	1.297
	CPV	-.450	.102	19.274	1	.000	.638	.522	.780
	PBC	.092	.061	2.299	1	.129	1.097	.973	1.235

a. The reference category is: Private Vehicle

In line with table 4, table 5 provides more detailed information. Each independent variable value is known to have an effect on 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 5 provides information for making equations from the model used, namely:

$$\text{Ln} \frac{P(\text{Non Online Public Transport})}{P(\text{Private Vehicle})} = -2,120 + 0,120\text{CPR} - 0,441\text{CPV} + 0,145\text{PBC} + e1 \dots \dots \dots (3)$$

$$\text{Ln} \frac{P(\text{Non Online Public Transport})}{P(\text{Private Vehicle})} = -2,480 + 0,162\text{CPR} - 0,450\text{CPV} + 0,092\text{PBC} + e2 \dots \dots \dots (4)$$

Equation (3) shows that the CPR in the equation is positive and significant, while the CPV is negative even though it is also significant. For PBC in the first equation is also significant even though it is positive. This shows that if the public considers the risk of contracting COVID-19 to be low, the probability for interest in using public transportation that is not online is higher than using private vehicles. Meanwhile, the CPV value can be interpreted if people think that the value or benefit of going out of the house (using public transportation or private vehicles) is low during the COVID-19 pandemic, the probability or possibility of using public transportation instead of online is smaller than using private vehicles.

In equation (4) it is known that CPR is positive and significant and CPV is negative and significant, while PBC is not significant. This can be interpreted, namely: if people think that the risk of contracting COVID-19 is low, then the possibility of them being interested in online public transportation is higher than using private vehicles, then it is the same as public transportation instead of online if people think the value or benefits of going out of the house (using public transportation, public or private vehicles) is low during the COVID-19 pandemic, the probability or possibility of using online public transportation is smaller than using private vehicles.

So the two equations indicate that the people of Palembang City in the COVID-19 pandemic are very concerned about the risk of contracting the corona virus, so that even though the new normal has been implemented, they still carry out health protocols. However, people still prefer to use private vehicles rather than using public transportation for work or other purposes in the city of Palembang. This is very possible because they are worried that they will be infected with COVID-19. People intentions in using public transportation will increase if they are sure that the transmission of the virus can be overcome. For PBC which is not significant in the second equation, so it is not meaningful and cannot be discussed.

CONCLUSION

The results of this study indicate that people cannot rely on public transportation as a safer means of transportation to use during this pandemic. Public transportation has not been considered to have a higher value by the community, both for its benefits and comfort, on the contrary, the use of private vehicles is considered to be of greater benefit and safer. Therefore, the public's desire that they will not be infected with COVID-19 when using public transportation needs to be a serious concern for the company. Thus, the company absolutely provides facilities and service methods in public transportation that can prevent passengers from contracting COVID-19.

It is also 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 in this field, as well as other related factors that can indeed support it.

ACKNOWLEDGEMENTS

The research/publication of this article was funded by DIPA of Public Service Agency of Universitas Sriwijaya 2021, SP DIPA-023.17.2.677515/2021, On November 23, 2020. In accordance with the Rector's Decree Number: 0007/UN9/SK.LP2M.PT/2021, On April 21, 2021.

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