

The presence of new threat for public transportation services in the industrial age 4.0

Wildan Dwi Dermawan¹, Faizal Haris Eko Prabowo²

^{1,2}Fakultas Ekonomi Universitas Galuh, Ciamis.

¹Email: dermawanwildandwi@gmail.com

²Email: faizalharisekoprabowo@gmail.com

Abstract

Business, technology and transportation systems growth rapidly along with the times. At present, transportation is a means that cannot be separated from the daily activities of human life. There are two types of transportation, namely conventional transportation and online transportation. The purpose of this study is to analyze and find out the differences in income earned, maximum income, minimum income and average income obtained by public transport drivers before and after online transportation. This study uses a comparative method to describe before and after revenue of public transportation drivers. The results show that there was a decreasing in the average driver's income of public transport by 60.5%, a decrease in maximum income obtained by public transport drivers by 60% and a decrease in minimum income obtained by public transport drivers by 50%. Decreasing the revenue of drivers of public transport after the emergence of new technology and the operation of online transportation caused a change in the interest of passengers in using public transportation. There are several reasons for the shifting of angkot passengers using online transportation services including travel time, lack of awareness and discipline of public transportation drivers, unscheduled fuel filling, forced transfer of passengers, and public transportation facilities.

Keywords: Transportation services; conventional transportation; online transportation; industry 4.0; revenue of public transport drivers

INTRODUCTION

Business, technology and transportation systems growth rapidly along with the times. At present, transportation is facility of daily human activities (Mollah, Munir, & Sari, 2018). Transportation is the activity of moving goods or humans by using a conveyance from one place to another. Transportation also contributes to supporting a country's economic growth. The increase of demand encourages people to use transportation services in high frequency, also it has an impact on economic growth which has increased quite well (Zakaria, Rahayu, & Astuti, 2013).

In Indonesia, the operational conditions of transportation services have unique characteristics. People in this country have high mobility in carrying out daily activities (Ahmad Nor Soleh, 2018). The Ministry of Transportation sometimes has many obstacles in monitoring and regulating the high mobility such as the increase in the number of accidents, retribution of tax and many more problems in the field of transportation (Yanuarsih, 2017). In addition to that, they also carry out their duties not only to monitor land transportation, but also water and air, because Indonesia is an archipelagic country which can be ascertained that its people will use all three transportation modes. From the three modes of transportation available in Indonesia, the people most often use land transportation. This is related to their daily activities such as work, school, tourism, and other activities that do not take much distance (Herwanto & Purnama, 2013; Teguh Budi Santoso, Okki C. Ambarwati, Rino A. Nugroho, 2018).

The evolution of several industries has made other industries undergo changes rapidly, right now the retail industry has developed not only selling products / services conventionally but using online and digital channels (Endra Yuafanedi Arifianto, Purnomo Budi Santosa, 2018). This changes in work method forces other industries such as services, telecommunications, healthy, banking and others to change to keep up with the times. In the end it has an impact on the demand and supply that occurs in the market. One of the problems that is currently arising is the change in market preferences, the majority of which are filled with millennials as productive markets. These changes change the supply and demand side of an industry, for example that is transportation services (Rambat Lupiyoadi, 2014).

There are several types of land transportation services that can be chosen by people. People can choose various types of transportation services including online transportation and conventional transportation. Online transportation is one of the innovations in land transportation services supported by communication technology through smartphone applications (Damis, 2018). Online transportation provides good service starting from ordering, speed in providing services, clarity of tariffs and convenience for its users and being able to reach places that cannot be reached by other land transportation services. This is the reason most people in Indonesia choose online transportation compared to conventional transportation (Fahlevi, Heru, Ananta, 2015).

As we know at this time, public transport that operation on the road has a traffic jam is caused by vehicle was stopping in any places, a vehicle that has exceeded its useful life, but is still used and the level of public transport tariffs that are collected by public transport drivers are not clear. These problems make passengers uncomfortable and also reduce their interest in using conventional transportation. Most people prefer to use private vehicles or use application-based transportation or often referred to as online transportation. Conventional transportation is public transportation commonly used by the public, including taxis, motorcycle taxis and public transportation. Conventional transportation in Indonesia does not all have good and comfortable facilities for passengers or users (Rosa, Widad, & Eka, 2017).

In 2016 was a phenomenal year for the development of online transportation services, with the presence of competition between online transportation service providers such as Go-jek, Grab and Uber (M. Rizal alfadin, Tanjung Hidayat, M. Zainul Arifin, 2018). All three have safe and comfortable facilities so that passengers choose the transportation. With the large number of users of transportation services who choose online transportation compared to conventional causes conventional transportation entrepreneurs, especially public transportation drivers, lose market share which results in a decrease in income. This condition is felt in various cities in Indonesia, for example is in Tasikmalaya. Online transportation operates in Tasikmalaya in 2017. Over time, online transportation in Tasikmalaya has developed. However, with the development of online transportation, the revenue

of angkot drivers in Tasikmalaya has decreased and public transportation is threatened with extinction (Kabar Priangan, 2018).

Several previous studies such as the research of Muliawan & I Ketut Sutrisna (2016) found a decrease in the revenue of public transport drivers after the construction of the Terminal in Mengwi. Other research concludes that after the Suramadu bridge the number of passengers has decreased, resulting in a decrease in the revenue of drivers of public transport (Arisinta, 2017). Different from some previous studies, this research analyze the income of public transport drivers before and after online transportation operated in Tasikmalaya.

METHOD

In this study, a comparative method was used with the aim of comparing the revenue of city transportation before and after the online transportation service was available. The object of research is income or sales from transportation service transactions. The approach used in this study uses quantitative with the type of data ratio. The time and location of the study took place in the city of Tasikmalaya, West Java Province, Indonesia in 12 months in 2018. Data collection techniques were carried out by interviewing city transport drivers as respondents in this study, some of the indicators being the highest income, lowest income, and average income per day before and after the operation of online transportation in the city of Tasikmalaya. Data analysis used in this study to prove the acceptance or rejection of the proposed hypothesis. The hypothesis proposed H_0 is that there is no difference in the assessment of public transport drivers before and after online transportation. Meanwhile, H_a is a difference between the assessment of public transport drivers before and after online transportation. If the value is Sig. (2-Tailed) ≤ 0.05 , there is a significant difference between income before and after online transportation. If the value is Sig. (2-Tailed) ≤ 0.05 , there is no significant difference between income before and after online transportation. The data analysis technique used is the t-test by comparing the calculation of the t count with t table. Based on this analysis the writer will know whether or not there is a difference in the income of public transport drivers before and after the existence of online transportation. The sample tested amounted to 83 respondents from a population of 101 respondents.

RESULT AND DISCUSSION

Based on the survey results indicate that there are differences in income of public transport drivers before and after the existence of online transportation. The results of the presentation of data and information obtained from 83 respondents were recorded based on maximum income, minimum income and average income, namely the maximum income obtained by public transport drivers before online transportation averaged \pm Rp.250,000 per day while maximum income obtained after online transportation of \pm Rp. 100,000, - per day. This shows that after online transportation there is a decrease in maximum income obtained by public transport drivers by 60%. Furthermore, the minimum income obtained by public transport drivers before online transportation is \pm Rp.100,000 per day. Meanwhile, the minimum income obtained by public transport drivers after online transportation is \pm Rp.50,000 per day. This shows that after online transportation operated there was a decrease in the minimum income obtained by public transport drivers by 50%. In addition, the average income obtained by public transport drivers before online transportation operated amounted to Rp.190,000 per day and the average income obtained by public transport drivers after online transportation operated was Rp.75,000 per day. This shows that after online transportation operated there was a decrease in average income by 60.5%. In addition, the results of hypothesis testing indicate that tcount (0,000) < (0,05) ttable then there are significant differences between income before and after the existence of online transportation operated. The difference in income occurs due to changes in the behavior of passengers in using transportation services. Changes in passenger behavior began with the presence of smartphones equipped with information technology-based applications. This application was created specifically to bring together providers of transportation services with users of transportation services. The presence of online transportation has reduced the market share of angkot passengers and switch, because today's passengers prefer to use technology that makes it easy to use transportation services including ordering, delivery as well as payment. There are several reasons for the shifting of angkot passengers using online transportation services including travel time, lack of awareness and discipline

of public transportation drivers, unscheduled fuel filling, forced transfer of passengers, and public transportation facilities.

Travel time using public transportation requires a longer travel time compared to online transportation. This is because the reach of public transport is quite limited. For passengers who have destinations outside the public transport route, they must follow a predetermined travel route so that service users must transit and board other transportation to get to their destination. Current users of transportation services prefer time efficiency rather than travel costs. They consider the existence of this transit activity takes a long time, from starting to wait for other transport until the transport time to the second to the destination. Unlike online transportation, they provide direct trip facilities or travel directly to the destination without requiring passengers to transit and change vehicles.

Another fact reveals that what causes a decrease in the income of public transportation drivers is the behavior of lack of awareness and discipline. Some of the behavior of public transport drivers that make inconvenience to service users are looking for passengers at each crossroads, this has become a habit that is often done by every public transport driver. In addition, do not stop the vehicle in the place provided / stop. They often make stops including waiting, dropping, and also raising passengers in a place they should not use. Unlike online transportation, the majority of online transport drivers know and practice traffic literacy or knowledge about traffic. One example of the awareness and discipline that has been carried out by online transportation drivers is that they reduce passengers in places that are safe to stop so as not to disturb other road users.

Scheduling in refueling is very important to support the production process in transportation services. On public transportation, this activity is not too well cared for. Public transport drivers often suddenly refuel at gas stations without confirming their passengers. Some passengers who need fast travel time will experience inconvenience due to the longer travel time. Unlike online transportation, most of them will refuel their vehicles with the schedules they have set without having to bring their passengers to the gas stations. Even they have prepared a special time to refuel before they operate.

In public transportation there is often coercion to passengers to move to other public transportation. This inconvenience often makes complaints from users of transportation services. Because the passengers must replace the vehicle with the same route, even then if other vehicles are still available. In online transportation such events will not occur, because online transportation operates without having to wait for passengers to fully fill the vehicle. The system on online transportation makes it easy for the driver to complete work based on incoming orders per trip, not waiting for passengers to meet the vehicle first.

Another reason related to the transfer of users of conventional transportation services to online transportation is the facilities provided by public transportation. Inadequate public transportation facilities such as vehicles that have exceeded the age limit, the absence of air conditioning / AC and there are still few special stops for users of transportation services making public transport no longer a mode of land transportation that provides convenient facilities to use. The age of public transport vehicles when viewed from the economic feasibility of vehicles has actually passed a considerable amount of time, most vehicles used by public transport drivers are more than 10 years old. Whereas other facilities such as refrigerators / air conditioners are not installed on public transport vehicles, this is because the maintenance of AC machines is quite high if it is used on public transportation. Actually the climate in Indonesia which is quite hot and moist requires that these facilities be installed on public transport to provide comfortable for passengers. Other facilities that make the switch of public transport passengers to online transportation are still a few of halte. This causes frequent public transportation to stop the vehicle on road suddenly and unpredictably.

It is also the main motive for users of transportation services to switch to choosing online transportation. In contrast to conventional transportation, online transportation offers convenient services both in terms of travel time, awareness and discipline, fuel filling scheduling, absence of transfer of vehicles, and available facilities. Online transportation provides convenience when users need transportation services, speed in providing services, clarity of tariffs and providing comfort is one of the added values they have. If this continues to be allowed by providers of conventional transportation services, it is not impossible to follow in the footsteps of traditional transportation that reduced market share like horse-drawn carriage and pedicab which since the presence of machine-based transportation operates.

CONCLUSION

Conclusions from this study have been founded to decrease the revenue of public transport drivers after the emergence of new technology and the operation of online transportation has caused changes in the interest of passengers to use public transportation. It also has an impact on decreasing the revenue of public transportation drivers reaching 60% of normal income. Some reasons why passenger switch of transportation services include travel time, good service quality and clarity of online transportation rates. Along with the development of technology, the behavior of users of transportation services has changed following the trend to become more flexible. If this problem ignored, it is not impossible that the existence of public transport will be reduced and even disappear from the transportation service industry. The role of the government is needed to help and minimize the problems that occur, one of which is by classifying the tariffs set for both conventional and online transportation services and standardized fleet management with added value. In addition, the role of land transport organizations (ORGANDA) is very much needed in the transportation service sector, which is changes rapidly in consumer behavior so that public transportation can still compete with other transportation. Some things should be done by ORGANDA so that public transportation can still compete with other transportation, namely setting standards for improving service quality and efficiency of operational costs.

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