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The Influence of Online Transportation Application to the Mobility and Economic of the Society (Case Study on Using Grab and Go-Jek in Bandung, Indonesia)

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Abstract. The development of information and technology on society cannot be ignored. One of the impact was on the transportation infrastructure development. The using of online transportation application was necessity on urban community. This research aimed at analyses the Influence of the online transportation to the mobility and economic of society, particularly in urban communities such as Bandung, Indonesia which were using GRAB and GO-JEK as online transportation application. The research focus on the existing of GRAB and GO-JEK as the most popular alternative online transportation application for the society compared to the other application, how they affect to the community especially for mobility and economic, and analyses what are the shortcomings of GRAB and GO-JEK that need to be addressed and developed. The method used descriptive and analyzed by using survey and questionnaire, which was distributed directly to the public. Based on the results, GRAB and GO-JEK was the most popular online transportation used by the people of Bandung. The response of the community with the GRAB and GO-JEK was quite good because of the cheap of price, the mobility and economic of society was also increased, people move more often and economic cycle level tend to increase significantly.

1. Introduction

At this time, the development of information technology is very rapid. Information technology has provided a very fast and significant change to the economy and behavioural patterns of society in terms of living, working, and interacting with others [1]. With the smartphone and internet, people can access information and services more easily.

Technological developments are based on technological advances in communication networks, advancing from third generation (3G) to fourth generation (4G). As the development of network communication technology, more people use smartphones and the internet and their ability to access information increases so they can maximize the utilization of smartphones and internet of what they have [2]. In addition to maximizing its use, the community can now also utilize the technology to conduct business activities such as trading or offering services. In the transport sector, the implications of technology tend to change the movement of people and goods in the last decade [3].

Technological developments have an impact on the transportation sector with the emergence of various smartphone applications for public transport services. With the smartphone, the interaction between customers and service providers becomes easier. The demand for public transport services



based on communications technology is quite high as they provide fast and responsive services and are generally cheaper than conventional public transport [4].

The smartphone application-based service customers frees to organize trips in real time with service providers. People see the service as a transportation alternative that can serve quickly, flexibly, responsively, and easily to use. In addition to providing an attractive alternative to travel, this service also has the potential to reduce the use of private vehicles and environmental issues [5]. However, such benefits do not apply to all income levels. Low-income people who do not have smartphones or cannot use the service will be left behind and people who rely on conventional public transport will lose market share [6]. This raises questions about the government's response to appropriate regulations and policies.

The growing phenomenon of online in-city transportation pick-up services has been widely welcomed and embraced by Indonesians who have long awaited affordable, high quality, and accessible transportation. Several examples of such services that are immensely popular are GO-JEK, Uber, and Grab, among others [7]. For many citizens, especially those who live in the densely populated city and whose lag monthly wages far from the living costs, buying a vehicle is an options. Therefore, this recent innovation in transportation services brought many a fresh solution [7].

There are various companies in Indonesia that provide electronic-based public transportation services, one of the most popular community is like grab and Go-Jek. It provide various services such as motorcycle taxi, passenger or freight, food ordering, ordering goods for your needs, and so forth [8]. The application can be downloaded on PlayStore and Appstore. The existence of Grab and Go-Jek with its various service features can definitely provide different effects on the community [9]. Because of this, this paper aims at analyse the influence of online transport to Mobility and the economy of the People especially in urban areas. Bandung is a city that serves as a case study, where Bandung has a densely populated population and high mobility.

2. Methods

Research on the influence of online transportation to mobility and community economy implemented in the city of Bandung. The study takes about 3 months and is conducted from September to November of 2017. This research was done by using descriptive research approach. Researchers conducted an online survey to the community of online transportation users in the city of Bandung. In this study, the instrument to be used in data collection is the use of questionnaire. This questionnaire contains questions that must be answered by the research subject that has been established as a sample of research. Questionnaire was required to obtain data in the form of responses of users of online transport services to the presence of online transportation as an alternative means of transportation and its impact on the mobility and economic conditions of urban communities. In this study data analysis activities performed simultaneously with data collection in the field. From the data collected then analysed by (1) reducing data, (2) display data, (3) conclusion and verification.

3. Results and Discussion

3.1 The comparison between GRAB and GO-JEK

The presence of motorcycle taxi online is making us easy to go anywhere, practical and cheap. From a number of these service providers, Go-Jek and Grab are still the most prominent and competing in Indonesia. Equally identical to the green, each has a weapon to attract the attention of consumers. Check out the comparison in the Table 1.

Table 1. Comparison between Go-Jek and Grab

Items	Go-Jek	Grab
Services	13 Services available: Go-Ride, Go-Jek, Go-Car, Go-Send, Go-Food, Go-Mart, Go-Busway, Go-Tix, Go-Box, Go-Clean, Go-Glam, Go-Massage, Go-Med and Go-Auto	7 services available: GrabBike, GrabCar, GrabHitch, GrabExpress, GrabFood, GrabTaxi Promo and GrabTaxi.
Number of fleets	220 thousand drivers (as of April 2016)	250 thousand (data April 2016)

Coverage Area	Jabodetabek, Bandung, Bali, Surabaya, Makassar, Palembang, Medan, Balikpapan, Yogyakarta, Semarang, Manado, Solo, Samarinda, Malang and Batam.	South East Asia, such as: Malaysia, Indonesia, Singapura, Thailand, Vietnam and Filiphina.
Smartphone utilities to serve customer	Applications using cellular data	Applications Using internet data

Based on the results of surveys that have been conducted to the community of users of online transport, the following fig 1 are found which are more popular in the community.

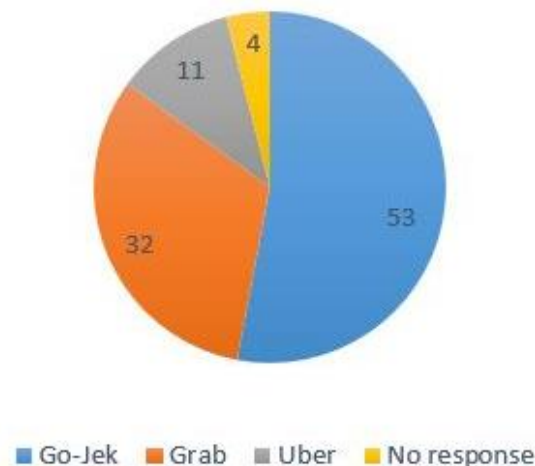


Figure 1. Percentage of user response regarding online transportation

In the rapid development of technology, many people from various backgrounds who use online motorcycle taxi application to perform their various activities. Of the 100 people, 53 chose GO-JEK, 32 chose GRAB, 11 chose UBER, and the remaining 4 did not vote because they had never used online transport.

Based on the calculation of the vote, 50% of respondents prefer to use GO-JEK compared with other applications are GRAB and UBER. This proves that GO-JEK is very influential for most people to travel to various destinations. After GO-JEK, there are GRAB with 29% and UBER with 19%. While 2% of respondents have never used ojek online. This shows that although technology is growing and giving changes to society, but there are still some people who do not use and use it.

Thus, Go-Jek becomes the most popular online transportation because in addition to being an ojek pioneer online in Indonesia, GO-JEK also provides a variety of services ranging from delivering passengers, sending and transporting goods, serving food reservations, daily necessities, medicine, cinema tickets, massage service, salon, mechanic, and so on.

3.2 The response of the community Using GRAB and GO-JEK

The use of online transportation such as Grab and GO-JEK has considerable influence for the people, both those who use and those who do not. Based on the surveys that have been conducted, the community response is very diverse, but the response is divided into two categories, namely positive and negative responses. Table 2 show the comparison of response using Grab and Go-Jek.

Table 2. The response of Community using Grab and Go-Jek

Positive responses	Negative response
- The level of public confidence in using motorcycle taxi services increased. - Helping the unemployed community by becoming a GO-JEK driver because it does not require having a highly educated diploma.	- There was a dispute between GO-JEK and the motorcycle taxi drivers. - Many employees who choose to resign from his job and choose to be drivers

- Help deliver documents and buy and deliver food and items to buy, etc.
 - Facilitate community mobility.
 - Make people not afraid to travel alone
 - Make it easy for people to search for transportation at certain hours and in places that are not covered by public transport.
 - Tariff paid is not as expensive as the base motorcycle taxi fares.
 - Make ojek service more coordinated.
 - Change the pattern of vehicle use to the community.
 - Causes the creation of tariff transparency between drivers and users.
- GO-JEK because tempted by earned income.
 - Make people lazy to do their own activities such as buying food, goods, etc.
 - Base motorcycle revenue decreased significantly.
 - Increasing competition among motorcycle taxi drivers

Based on the above results at the Table 2, the role of online transport such as Grab and GO-JEK does provide more positive effects than negative influences. However, the negative effects can be meaningless even if they have a greater positive effect. Negative impact can be very large if the government does not perform its function as a regulator well.

The role of government is urgently needed to minimize the risk of widespread negative influence by making regulations related to the online transport business process and what services can be provided to protect the poor. The point is to limit the behaviour of online transport business that can harm society. If the government does not supervise, it can expand the scope of its business for profit and make the poor in Indonesia more miserable. It can happen because the business is only focused on people who understand smartphone technology and internet and can operate it. While on the other hand not all Indonesian people understand about smartphone technology and the internet, especially for the poor and the people who hang their work without using such technology.

3.3 The Impact of Online Transportation to the Population Mobility

Population mobility is closely related to development because population mobility is an integral part of the overall development process. This means that there is no development without population mobility and vice versa there is no population mobility without development. The high mobility of the population in an area will affect the chosen development strategy, so that the development will really improve the welfare of the entire population or community that support the development. On the other hand, the intensity of development in an area also affects the mobility of the population, the mobility of the population to the area will be great if the intensity of development is high, and vice versa.

In the city of Bandung, population mobility is not only happening because of the movement of the population from village to city [10]. But mobility takes place within the city itself. The influence of transportation is very high, so the citizens of Bandung tend to perform economic activities. The person's motivation to move is an economic motive [11]. The motive is developed due to the economic inequality between regions or due to regional potential differences. Todaro and Smith mentions the main motive as a rational economic consideration. Mobility to urban areas has two expectations of gaining employment and higher income expectations than those in the countryside [12]. Thus the mobility of the urban villages simultaneously reflects the imbalance between the village and the city, therefore, the direction of population movement also tends toward cities with larger economic powers and is expected to meet their economic needs.

Currently, the mobility of the inhabitants of the city is ensured due to the movement of the population with ease of accessibility to reach a location. One of the online transportation that causes Bandung residents to move to conduct their activities. The easier it is to get transportation services the faster and easier the citizens move towards one location to another location [13]. However, on top of

that, the city of Bandung experiencing problems with congestion, so the movement of the population from one location to another location experienced obstacles in the speed and timeliness.

Based on data from Central Bureau of Statistics (BPS) [14] the percentage of people conducting mobility activities in the Last 6 Months by Gender show in the table 3.

Table 3. Percentage of People Conducting Travel Activities in the Last 6 Months by Gender, 2017

Activities	Man	Women	Total
mobility activities in the Last 6 Months	30.41	34.16	32.26

3.4 The Impact of Online Transportation on Economic Conditions (Unemployment and Poverty)

The opening of employment from the informal sector, assessed able to reduce the poverty rate in Bandung. Based on data owned by BPS of West Java Province [15], poverty rate in Bandung decreased about 0.17 percent. The comparison is in 2015 and the figure reached 114,012 people, but in 2016 fell to 107,058 people.

Although the percentage is still relatively small, but now the poverty rate in Bandung tends to decline. There are several factors that trigger this decline. Among other things, widespread employment from the informal sector. Like the growth of motorcycle based motorcycle taxi online application. Then the number of culinary sales in various layers of society and so forth. The decline in poverty is due to the opening of employment opportunities. Unfortunately this is only open in the informal sector. Should the formal sector be encouraged also so that the poverty rate will decline more sharply?

In addition, one of the factors that led to the decline in poverty in Bandung, namely the increasing number of citizens who work as a driver-based online transport smartphones applications. But it is not the sole factor. Furthermore, the cause is a lot of things that have been done by Bandung City Government to reduce the poverty rate. One of them, namely by relocating the street vendors to a better place that has provided the city government. Thus the townspeople have a better life and get better jobs and places to sell and safe for them. In addition, the government always performs job vacancy activities/jobfair to job seekers. The economic growth of Bandung City show in table 4.

Table 4. Economic Growth of Bandung City from 2011-2016

Year	Economic Growth Rate (%)
2011	7,91
2012	8,53
2013	7,84
2014	7,72
2015	7,64
2016	7,79

4. Conclusion

Public transportation provides many benefits to the community, whether using or not. Through the development and deployment of technology in the 21st century, society has now found it easier in the public transport system than in previous years. Public transportation helps everyone in meeting their personal and career needs, fulfilling daily needs, and maintaining a level of independence drive. GRAB and GO-JEK was the most popular online transportation used by the people of Bandung, Indonesia, the response of the community with the GRAB and GO-JEK was quite good because of the cheap of price, the mobility and economic of society was also increased, people move more often and economic cycle level tend to increase significantly, the system and application of GRAB and GO-JEK need to be improved especially for online service such as applications and drivers valued service, so that people can use this application with a sense of security and comfortable.

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