

Comparative Study of Online Taxi and Conventional Taxi Ordering Systems

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Abstract. Taxi is one of the urban public transportation that can attract customers with several services provided. There are 2 options for ordering taxi transportation services, conventional and online. This study aims to enable us and the public as taxi customers to find out how the difference between a conventional taxi booking system and online and looks like what the two systems look like. In technical data processing and analysis techniques both of these are carried out simultaneously. After getting the data to make observations and direct interviews to the saturated data which is then processed and the data is analyzed by the descriptive approach of the induction method, which is a contradictory thought drawn in general.

Keywords: taxis, conventional, ordering, applications, systems

A. Introduction

Transportation is an inseparable part of human activities to move from one place to another. Moving in time, smooth places movement, and moving without any adverse risks are the keys to all successful transportation activities. According to Rudi Aziz dan Asrul (2014 : 2) The transportation system was formed with the aim of helping the process of transportation of passengers and goods to be achieved optimally in a certain space and time with consideration of safety, comfort, smoothness, and time and cost efficiency. [1]. In the current era, everyone wants everything that is practical, easy and inexpensive, as well as public vehicles, people will prefer vehicles that are practical and inexpensive (Farokhah Niswah 2016). Especially regarding the transfer of goods, the quality of goods transportation services must be carried out effectively and efficiently in a way that is smooth or fast, safe, orderly, responsible, and cheap. Taxis are one of the alternative land transportation tools that are in great demand by the community because of their ease of use of services transportation, especially taxis in the era of today there are online taxi-based applications that make rivals against conventional taxis. According to Dr. Andriansyah, M.Sc. in his book entitled "Transportation Management in Studies and Theory" that a system or management of modes of transportation by a group or group. (Dr. Andriansyah, 2015a)

Public transportation is passenger transportation carried out with a rent or pay system. Included in the sense of passenger transportation are city transportation (minibuses, buses and others), trains, water transportation, and air transportation. [3].

Conventional taxi is urban public transportation that does not have a route and has an meter for calculating tariffs. Whereas in MR 108 Year 2017 conventional taxi transportation *transport by using a public passenger car that is specifically marked and equipped with a meter that serves door-to-door transportation with operating areas in a particular area.*

Online taxi is a transportation that is in urban areas whose services come from online taxi application companies and the ordering system is only through applications. This has been stated in MR 108 Year 2017 article 1 paragraph 22, *"Application companies are companies that provide information technology based applications in the field of transportation.* (MR 108 Year 2017)

Android and iOs are an operating system on a mobile phone. These system are a device that is embedded in a cellphone and can be used to operate an application [5].

B. Research methods

This study uses descriptive qualitative method that describes the object of research verbally through observing the phenomena that occur and conducting interviews to obtain information relating to the problem being examined with the parties concerned such as users and drivers of online taxis and conventional taxis which are then recorded later. Processed in a logical mind and using standard writing. The purpose of this descriptive qualitative study is to find out between the differences in taxi booking systems from application-based and conventional ones as well as making descriptions in a systematic, factual and accurate manner that is being studied or has been studied. This research was carried out in the DKI Jakarta area which was aimed at Trisakti East Jakarta ITL students, the surrounding community and drivers. This research was conducted for 2 months in May-June. Data collection that is done in qualitative research is by observation observation techniques and in-depth interviews. Observations are observing and recording the meticulous symptoms from the comparison between the ordering system between online taxis and conventional taxis which are directly seen. Interview in this regard to aim to collect some information about online and conventional taxi booking systems as material for research. This technique directly interviewed Trisakti ITL East Jakarta students, a number of people around and taxi drivers. Technically these two things are done simultaneously. After getting the data to make observations and interviews directly to the saturated data which is then processed and the data is analyzed by the descriptive approach of the induction method, which is a contradictory thought drawn in general.

C. Results and Discussion

Taxi Ordering System At The Moment

As one of the conventional taxi companies that have been well-known and gained a lot of trust by the Indonesian people, namely Blue Bird. As one of the well-known taxi companies Blue Bird still uses the ordering system manually. Ordering a conventional taxi also takes a long time if the existence of a taxi is not around the consumer and when booking a conventional taxi when canceling it is subject to cancellation rates. As with the conventional taxi system, the way to order must first be through the operator. Ordering in this way tends to be time consuming and the customer does not know where the driver is so he cannot estimate the time to get to the destination, and the customer cannot directly connect with the driver but must contact the operator first to deliver the message.

Online taxis are application-based taxis that can make it easier for passengers to order taxis anywhere. As one example of an online transportation company that has long been engaged in Indonesia, namely Go-Jek with its online taxi service called Go-Car. The system, customers must download an application from an Android / iOS-based smartphone, after downloading then log in first, verify personal data in the form of e-mail, mobile number and username. After that, log in again to enter an online taxi application. Then to order it, first enter the online taxi application, determine the place of origin and destination, then the price or tariff appears, adjusted to the distance between the place of origin and destination, then the *driver* will randomly verify the order and you will find out the driver name, type of car, and the driver's license plate number listed in your Go-Jek application after that immediately pick up the customer according to the pick-up point indicated on the application.

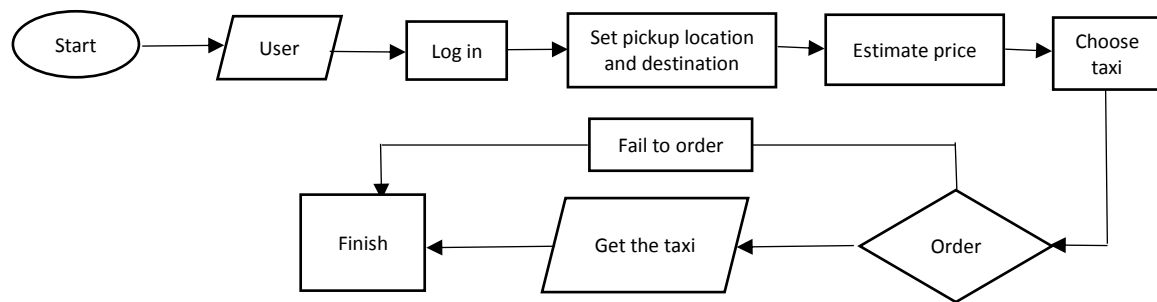


Figure 1 Online Taxi Ordering Mechanism

An explanation of the online taxi booking mechanism: [5]

1. *User* as passengers must enter or log in to an application and before that the passenger must fill in the account registration section with the part to be filled in. Full Name, Phone Number, Date of Birth, Address, *E-Mail*, and *Password*.
2. After registering, the passenger fills in the pickup location and destination address completely.
3. After both are filled, the estimated price will be indicated based on the distance of the pickup location and destination.
4. The system also looks for which taxi is closest to the location of the pickup point. If the search is complete the system gets the nearest taxi and lists the taxi profiles to be ordered such as the Driver's Name, Telephone Number, and Police Number. If the search fails, the booking is canceled and search for the nearest taxi.

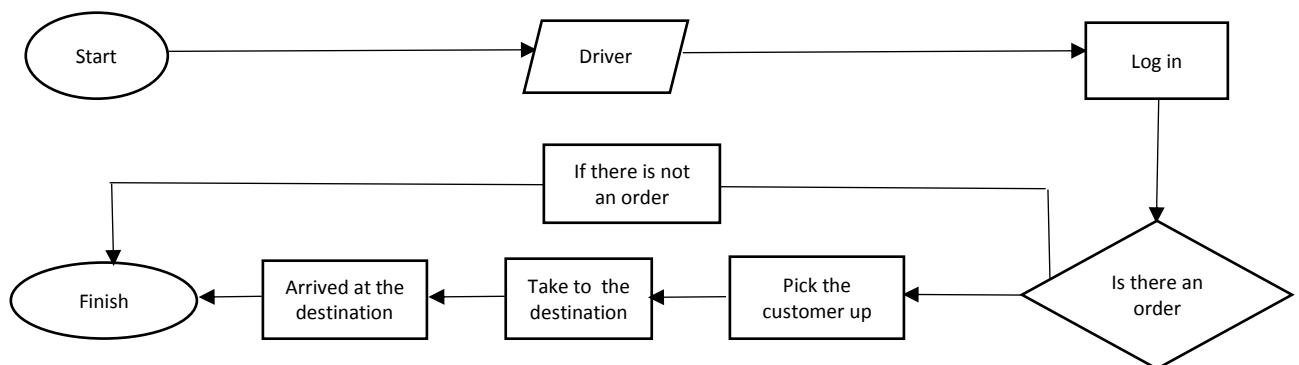


Figure 2 Online Taxi Order Receipt Mechanism

Explanation of the order acceptance mechanism: [5]

1. *Drivers* enter or log in to a special application for taxi *drivers*. If you don't have a *driver* account, first fill in the registration section for taxi *drivers*. If there is an order the *driver* will immediately accept the order, otherwise he will continue to wait for the next order.
2. After receiving an order, the *driver* immediately picks up the passenger according to the location specified by the passenger.

3. Then deliver the passenger to the destination according to the location listed on the application.

One of the Flow Orders from One Application-Based Online Taxi Company:

Users opening the Go-Jek application can choose an online taxi transportation service called Go-Car, printed a map and fill in the destination we will go to and automatically display the name of the destination along with a specific address. After that, determine the location of the pickup point or type in the "search" column. After determining both, choose the method of payment can be via electronic money (Go-Pay) and Cash. Press the "Order Go-Car" button and the system will search for and select the closest driver from the pickup point and after finding the *driver* listed the travel price and *driver's* personal data.

Blue Bird Booking System Through Application

The conventional Blue Bird taxi company has long had an order system through an application, namely in 2011 called "Blue Bird Taxi Mobile Reservation". And in 2017 the application-based taxi booking system launched by Blue Bird developed and improved the booking system in 2011, namely Blue Bird Taxi Mobile Reservation to 'My BlueBird'.

The latest application from Blue Bird named My Blue Bird provides several developments and progress from its ordering system, some of the newest features in the form of:

1. More advanced bookings. The advantage of this feature is being able to book singles or for multiple bookings and can also order a taxi for the next few days or next month.
2. Communication without a mobile number. The advantage of this feature is that if you order a taxi and want to contact the driver, your privacy will be maintained because the driver will not know your mobile number.
3. Track Location. In this My Blue Bird application, this feature can plan trips with friends and family. And you can also monitor their location, and they will also know your location.
4. Estimated costs. By knowing the price before taking a taxi, you can make sure that the price is friendly in the bag. Payment can also be made with direct money or with vouchers issued by Blue Bird as a company
5. Easy ride. This feature can make it easier for Blue Bird users by manually ordering through the application but can make payment of rates in the user's application.

Indicator	My BlueBird	Go-Car
Payment method	Use cash, credit cards, T-Cash, BlueBird e-Vouchers.	Use Go-Pay and cash
<i>Customer Profile</i>	Data unknown by driver (telephone number)	Known data (telephone number)
Order	Can book more than one trip and can book for trips later	Only one-way trip
Cost	My BlueBird is more expensive	Go-Car is cheaper
Cooperation	Blue Bird's collaboration through internal and external	Go-Car Cooperation only through internal
Other Features	<i>Easy Ride</i> , which can be ordered manually but payment can be done through the application	Only through Application

Online Taxis and Conventional Taxis in Law

Public transportation services that are not in application-based routes, especially in online taxi-based applications are contained in MR 108 Year 2017 Article 63 verse 1 *"To increase the ease of ordering People Transport Services with Non-Route Public Vehicles, Public Transport Companies can use information technology-based applications "* In the implementation of online application-based taxi transportation, it can also be done independently or partnered with other land transportation transportation companies as stipulated in article 63 verse 2 *"The use of information technology-based applications as referred to in paragraph (1), can be carried out independently or in collaboration with Application company in the field of land transportation "*. In the payment of tariffs in an online taxi based on applications can be done in cash or electronic money. This is stated in article 63 verse 3

As a land transportation that organizes online taxi transportation, he is obliged to carry out all obligations that have been regulated by the government, one of which is in the company's data system. Online taxi transportation companies are required to provide data access to the government related to the activities of carrying out online taxi transportation as specified in article 67 paragraph 1a

"giving access to the Digital Dashboard to the Director General, Head of Agency, Governor, Regent / Mayor in accordance with his authority".

The data that must be accessed by the government is the name of the company, the person in charge, the address of the company, the data of all vehicles and drivers, data related to the implementation of company activities, and complaints services such as criticism and suggestions.

The purpose of data access is so that the government can oversee the activities of online taxi companies so as not to deviate from the provisions implemented by the government.. MR 108 Year 2017

Broadly speaking, online taxi based applications with MR 118 Year 2018 already have criteria between the driver and the applicator but there are some criteria that are not implemented by the applicator as stated in article 5e *"Equipped with a monitoring tool for drivers who can record vehicle speed and driver behavior in operating vehicles"* and also in article 5g in terms of driver identity *"Include e-mail addresses and public complaints service telephone numbers that are placed in the vehicle and are easily read by service users"*. [7]

Conventional Taxi Transportation

Transportation services for people who are not on the route or can be known as taxis using the application mentioned in MR 108 Year 2017, especially in article 6 paragraph 1g *"Reservations can be made through information technology-based applications"*. Conventional taxi transportation can also transport passengers through the application and can make transactions via electronic also via cash. As stated in article 6 verse 3 *"In terms of People Transportation Services by Using Taxis by ordering through information technology-based applications, payments are made based on the price rates listed in the application of information technology with proof of electronic documents"*.

D. Conclusion

In an online taxi booking application-based there are items that help in the messaging system, such as Andorid, Google Maps and GPS and the mechanism system works include Entity Relationship Diagrams (ERD), Use Case Diagrams (UCD) and Online Activity Diagrams. In the system it works from the start involving customers ordering the operator then from the operator connecting to the driver. Conventional Blue Bird taxis already use the ordering system through the application but still run the ordering system manually. In the

ordering system through the application everything is almost the same in the way with other online taxis.

Suggestion

In the ordering system through the application, the ordering cellphone number is kept confidential from the driver to prevent the occurrence of crime and maybe in ordering a taxi online with the application does not provide telephone charges to the buyer so as to reduce the cost of ordering an online taxi or can divert telephone online.

Bibliography

- [1] F. Amaliah, "Kontestasi Taksi Konvensional Vs Taksi Online Di Kota Makassar," vol. *الاحاء عدد*, no. 108, p. 43, 2001.
- [2] J. E. Juniawan and A. A. G. A. A. Kusuma, "Faktor-Faktor Yang Mempengaruhi Customer Switching Dari Taksi Konvensional Ke Taksi Online," *E-Jurnal Manaj. Unud*, vol. 6, no. 10, pp. 5460–5488, 2017.
- [3] M. S. Dr. Andriansyah, *Manajemen Transportasi Dalam Kajian Dan Teori*. Fakultas Ilmu Sosial dan Ilmu Politik Universitas Prof. Dr. Moestopo Beragama, 2015.
- [4] "PM_108_Tahun_2017.pdf."
- [5] A. Wahyu, R. Emanuel, and A. Salim, "Pembuatan Sistem Pelayanan Taksi dengan Menggunakan Android , Google Maps , dan Ruby on Rails," pp. 17–28.
- [6] Muhammad Syahputra, "Perancangan Aplikasi Booking Taxi Secara Online Berbasis Android," vol. *الاحاء عدد*, p. 43, 2001.
- [7] KEMENHUB, "Menteri perhubungan republik indonesia," *Peratur. Menteri Perhub. Republik Indones. Nomor Pm 115 Tahun 2018*, pp. 1–8, 2018.