PERCEPTION TOWARDS ‘OJEK’;
A CASE STUDY IN YOGYAKARTA AND BANJARMASIN

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ABSTRACT

Research was carried out to investigate the role of ojek, the motor
cycled taxi in Yogyakarta and Banjarmasin. The investigations involve
the perception of passengers towards the performance of ojek compared to
formal public transport like city bus.

A stated preference technique was adopted in data collection and
in the analysis, which was reinforced by data of the revealed preference
taken in the survey.

The findings show that in general the prospect of ojek is better
than that of formal public transport, although with a more expensive fare.
This is because time value is more valuable so that people prefer making
a trip by spending a bit more expensive cost rather than waiting longer
for cheaper public transport.

INTRODUCTION

Transportation is a very important and strategic means for the smoothness
of regional economic activities. This reflects in increasing demand for transportation
service for passenger and commodity mobility. In addition, transportation also plays an
important role as a support and motor for development in a region with potential, but
still underdeveloped. The present growth of transport facility and infrastructure reflects
its role in regional development. Road network development takes the same place as
regional development, reaching the length of approximately 386,000 km of which
14,600 km is national road, 403,000 km provincial road, and 313,200 km district
road. The number of vehicles has reached 16.5 million consisting of 611,000 buses, 1.64
million commodity cars, 2.55 million passenger cars, and 11.7 million motorcycles.

According to the Law No. 14/1992 on Road Traffic and Transport, passenger
(or commodity) transportation using motorized vehicles, whether or not having
baggage, needs to consider passenger’s comfort and safety. The consequence is that
vehicle used for commodity transportation cannot be used interchangeably for

passenger transportation, or vice versa. However, under certain situations especially in
areas with insufficient number of transportation means, this regulation gives an
exception with one condition that safety aspect and traffic safety considerations remain
high in the operation.

In principal, activities of passenger (or commodity) transportation with fare can
only take place with public transportation. For passenger transportation using public
vehicle, the means may vary from inter-city transportation, urban transportation, rural
transportation, and border-crossing (international) transportation. They can operate
based on a permanent and regular operation permit (trayek), meaning that the operation
runs on a fixed network and regular schedule. Apart from that, it may run on unfixed or
irregular schedule and route, which is usually, called non-fixed base. For commodity
transport, there is no further grouping although in terms of safety, security, and
orderliness of traffic, there may be a regulation for its transportation network. Thus, it is
quite likely that there will be restriction in area of service according to the kind of
vehicle it uses.

The need for passenger and commodity transport service is increasing from year
to year as the population grows and also human mobility as well as production activity
increase. This condition demands the availability of highly effective and efficient
transportation service. However, there are still many shortcomings in transportation
availability, such as the quality, capacity, accessibility, and safety, which reflect in the
ease of obtaining service, comfort during trip, barely affordable fare, and accident rate.

Those weaknesses, especially the accessibility and capacity, which are unable to
satisfy the demand, give bigger possibility for ojek service; a mode of transportation
service that cannot be grouped based on the existing laws. It is also a transportation
service activity that is not fully complying with the laws. People have not built a
uniform perspective, even not having any perspective at all. Based on temporary
perspective, it seems that ojek activity has recently been increasing especially in urban
areas, as well as in isolated places having no regular formal transportation. Apart from
that, the number of unemployment, which continuously increases due to prolong
economic crisis, makes it an alternative for providing job opportunity.

The existence of ojek gives positive influence on passenger and commodity
mobility/accessibility level and also on transportation system in general. From user’s
side, it offers additional alternative, and at the same time, easier in making a trip from
one place (origin) to another (destination). From operator’s side, it gives some
economic benefit and opens up job opportunity although it can also become a threat for
formal transportation. The role of ojek viewed towards transport system in general will
give not only positive influences as part of service network system, but also some
inevitable negative impact.

Nevertheless, ojek may also give negative impact to users, operators, and
transportation system in general. Ojek operation that does not follow the existing
Starting from the point where demand for ojek is increasing and from the awareness of its positive and negative influences, it is necessary to do a research to find out the extent of ojek role and support in enhancing passenger and commodity mobility.

The objective of this research is to examine the passengers' perceptions towards ojek and therefore its service quality could be known.

DESCRIPTION OF OJEK

1. The Characteristics of Ojek

Ojek is either a passenger or commodity transportation that runs on a route based on passenger's agreement, in a strategic region both in the city and suburb during operational hours, and applies for based on mutual agreement.

This implies that the route is flexible, the service area exists where demand for formal public transport is higher than its supply. Moreover, the operational hours may happen where there is formal public transport or is not, with the fare based on mutual agreement, normally influenced by the distance.

In smaller cities or other areas where transportation service facility is limited, ojek can be a very important alternative for public transportation means. Besides, its competitiveness viewed from trip time, comfort (privacy factor), and other considerations - makes it gain more added values than other formal transportation means.

2. Service network

In its operation, ojek usually does not have a specific route network so it often becomes mixed used with other formal transportation on road space. This condition triggers chaotic traffic, which often leads to traffic jam and delay at traffic light to result in queue for ojek itself and other formal transportation. Eventually, this may cause danger to the safety of ojek or others.

Ojek service routes usually bases on mutual agreements between the driver and the passenger. A fare agreement may be made before a passenger obtains the service or the driver has already decided his fare based on trip distance.

3. Government Policy

According to the Laws no. 14/1992, it implies that there is no legalization for ojek operational permit from the authority (Institution for Road Traffic).

Some cities make a regulation to ban ojek operation on roads that are served by formal transportation and to allow its operation only in certain areas (such as housing complexes). Even some other places have not issued policy concerning ojek operation due to multiple considerations.

RESEARCH METHOD AND DATA COLLECTION

This research uses data collection techniques that are familiar in transport research: Stated Preference (SP) and Revealed Preference (RP). In RP technique, the data are aggregate secondary data, while in SP technique it uses primary data from field survey and individual data. It uses SP technique to find out responses from individual. This technique enables to apply selected condition in variations of condition that have not existed. Although it is true in the field of transport planning, this technique has been frequently used in secondary-tertiary commodity marketing research.

The design of questionnaire in SP technique is an imaginary situation, which may or may not happen. Different possible attribute combinations are set as a scenario to be presented to respondents for preference. Respondents are required to give response to the scenario choices by imagining that this imaginary situation will be applied. The researcher can put control on the factors formulated in the offered alternatives. Thus, this technique offers a very wide possibility to do experiment on situations that are difficult to measure as in the actual observation (revealed preference). Nevertheless, there are some weaknesses in SP technique: i.e. violation of respondent's response. The violation is respondent's subjectivity. In other words, if the situation in SP technique is actualized, the respondent does not choose as according to the choice he makes in the SP.

Since this research is to find out people's response towards ojek and the expected results are quantitative measure. Therefore the SP technique is considered to be appropriate.

Results from research using SP technique give standards that can be used for investment priority or in need and trip behavior planning and prediction in the future. The strength of SP survey method is the flexibility in experiment design for various situations, so that it enables to fulfill the need for required data. This, however, must be supported with realistic responses from the respondents in order to have a consistency between the response in the survey and the preference when the situation is actualized.

The concept applied in SP technique is classical economic concept i.e. utility in
highest satisfaction. The generic formulation of utility is a linear equation in which a combination of influential attribute exists.

\[ U_i = a_0 + a_1 X_i + \ldots + a_n X_n \]

with:
- \( U_i \) = utility
- \( X_i \) = attribute
- \( a_0 \) = constant
- \( a_i \) = coefficient

The coefficient reflects the amount of relative influence of attribute on satisfaction level, while \( a_0 \) constant reflect a basic difference from a product.

In fact, almost all users have inconsistent factor in selecting behavior. In other words, there is a faulty factor that is unidentified in the survey. Therefore, in SP technique this faulty factor is always included in utility to reflect unobserved variable.

For this research, data was collected from two cities namely Yogyakarta and Banjarmasin where ojek is easily found as a transport mode in the cities.

SP technique was applied to analyse the passengers’ perception. In the SP data collection three scenarios were asked to respondents. The scenarios concerned with transport quality such as fare, waiting time, trip time and security. A total number of 50 respondents from each city were analysed for this research.

**DISCUSSION**

1. **Transport Mode Preference**

Trip behavior decision making process is a complicated process. Social economic condition and trip-maker’s activity pattern are major factors that influence trip behavior decision. Trip-maker’s decision, which is influential in transportation demand prediction, is a trip behavior decision, which relates to the following:

a. travel time,
b. trip purpose,
c. mode preference,
d. route preference.

Trip maker’s decision that relates to time includes decision on trip purpose. The last relates to destination. Meanwhile, decision on transport mode relates to what type of mode to be chosen for his trip. In this case, the mode is divided into two: ojek and formal transportation. Competition often occurs between the two modes in the formulation of transport policy.

Examination. The behavior here refers to trip-maker’s behavior. In the field of modeling, transport demand should be based on information about preference and decision from field observation (revealed preference). Revealed preference, in its development for perfection, uses a technique called stated preference. Moreover, the mode preference model is necessary to develop regional transport system. Mode preference is defined as dividing number of trip into different travel modes/means.

Mode preference analysis is used to compare profit and loss from the use of transportation means. The factors that give influence in mode preference can be classified into 3 groups (Ortuzar and Willumsen 1994). They are the characteristics of travel behavior (ownership, income, household structure, social economic strata), the characteristics of trip (trip purpose, trip time, distance), and the characteristics of transportation facility (trip time on vehicle, waiting time, relative cost, parking availability and fee, comfort, reliability, security). A good preference model will consider those factors.

Mode preference may become the most important model in transportation planning. It is due to the key role of public transportation in government policies which is unarguably consuming more efficient road space than private transportation (Tamin, 1997). One of mode preference models is discrete preference model, a model that describes individual preference among a limited number of discrete alternatives, as a function of a number of variable definition and measurement at the same individual level.

According to Papacontas (1997), in various trip situations trip-maker may choose one or more modes among several available transportation modes. The choice relates much to trip-maker’s behavior. The reason for mode preference may be different among individuals, trip types, and service level, as well as relative cost offered by that transportation mode. If a trip maker considers the reason for mode preference he is adopting, then the influential factor can be measured. The observation shows that pattern of transportation mode preference is relatively unchanged as long as under the same condition. If a significant change occurs in a trip condition, trip maker will give responses in different preference variations of choosing a mode. For example, if parking fee undergoes a significant increase, it is likely that trip maker will shift from private vehicle to public transport.

2. **Condition Scenario**

It needs an analysis that is based on SP data to do analysis on passenger’s perception towards ojek and formal transportation. The data are obtained from interview survey. Three scenario are set to describe transportation condition in order that user can choose the condition he/she wants. Basically, these scenarios have differences in terms of variables: fare, waiting time, trip time, and security. So, the utility becomes a function of those variables.
Table of Ojek and formal transportation scenario of the research

<table>
<thead>
<tr>
<th>Variable</th>
<th>SCENARIO I</th>
<th>SCENARIO II</th>
<th>SCENARIO III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Informal</td>
<td>Formal</td>
<td>Informal</td>
</tr>
<tr>
<td>Fare (Rp)</td>
<td>1000</td>
<td>500</td>
<td>2000</td>
</tr>
<tr>
<td>Waiting time (minute)</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Trip time (minute)</td>
<td>10</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Security</td>
<td>1 (good)</td>
<td>1 (good)</td>
<td>0 (sufficient)</td>
</tr>
</tbody>
</table>

Utility of all both formal and non-formal transportation modes in every city is, as a whole, a function of fare and waiting time variables.

\[ U(\text{non-formal, formal}) = f(\text{fare, waiting time}) \]

Proportion of Each Mode Preference

After obtaining utility model for each city and mode, the next step is to calculate preference proportion of each mode. The process goes through the following procedures:

1. Finding the utility amount by including attribute values from scenario
2. Using mode preference formula and using the utility value to calculate the preference proportion for each mode.

The Mode preference formula is as follows:

\[ P_{\text{formal}} = \frac{e^{U_{\text{formal}}}}{e^{U_{\text{formal}}} + e^{U_{\text{nonformal}}}} \]

\[ P_{\text{nonformal}} = \frac{e^{U_{\text{nonformal}}}}{e^{U_{\text{formal}}} + e^{U_{\text{nonformal}}}} \]

3. Perception towards Ojek

Results from interview with passengers in actual setting show their perception towards ojek and formal transportation. This perception can be reflected in various level of preference: whether they choose ojek or formal transportation.

Results from data analysis are presented in the following:

For ojek in comparison with formal transportation, it reveals that respondents surely choose formal transportation whenever it is available, in all scenarios.

In the first scenario, more than 60% respondents prefer formal transportation if it is available because both formal transportation and non-formal transportation have equal the same parameter.
CONCLUSION

In general, the prospect of ojek is better than that of formal public transport. This reflects in the portion the users choose, which is bigger for ojek than for formal public transportation. More than 50% users prefer ojek with one condition that its waiting time is shorter than that of formal public transportation. The difference in waiting time gives more influence on preference than the difference in fare. It seems that at present, time value is more valuable so that people prefer making a trip by spending a bit more expensive cost to waiting longer for cheaper transportation.

Another evidence is when the second and the third scenario are applied with shorter waiting time and trip time, despite higher fare. Thus, it can be concluded that without setting a plan to reduce waiting time and trip time, formal transport will lose its prospect to ojek.

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