Perception of taxi online service users towards women drivers based on Kano models

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Abstract. Many online taxi providers are similar with a variety of quality services, so that business competition is getting tougher. But there are still many consumers who complain about operator online transportation, especially related to female drivers. So, from that researchers want to conduct a study entitled perception of female driver online services with the Kano method. The purpose of this study was to determine the user perceptions of the quality of online taxi services for female drivers based on performance and interests, knowing the attributes that must be improved, maintained or reduced by priority based on passenger perceptions of female drivers. The sample of this study was 133 passengers who had used the online taxi application. This study produces 3 dimensions, namely appearance, soft skills and hard skills which are divided into 9 service attributes. Based on data processing obtained there are 5 performance attributes, 2 indifferent attributes and 2 attractive attributes, there are the driver's appearance is neat, clean fragrant, and the driver knows the location of the destination address. From Kano evaluation table is obtained average coefficient satisfaction 5.785 and average coefficient dissatisfaction -4.402. The average functional and dysfunctional value is 2.906 and 2.355.

1. Introduction
With the times, women's involvement in the public sector, especially in economic activities it has increased. The past year there are many women who work as online motorcycle taxi drivers. It is certainly not easy for women to enter work dominated by man. The challenges they faced is to prove they are able to undergo a profession that is usually done by men.

With the rapid development of online-based transportation such as motorcycle taxis online, interest in these jobs is also increasing, many people make professions online motorcycle taxi drivers as the main job or work side. As a job that is identical to men, motorcycle taxi drivers online are also cultivated by women. Although not many women are undergoing the profession as an online motorcycle taxi driver.

With the existence of online motorcycle taxis makes traveling activities easier. However, a number of incidents are quite heartbreaking for online taxi drivers, especially female online motorcycle taxi drivers. Reporting from TribunJakarta.com, female motorcycle taxi drivers are higher canceled by passengers than men. From Gojek internal data, the cancellation rate of consumers to female driver partners is 2.7 percent higher compared to male partners. Through female drivers also care in terms of completeness of files and driving safety. Women are considered uncommon to drive vehicles, let alone carry passengers. That is also often a problem for female drivers. Quite often they have to be canceled, when customers know they have a female driver.
Increasing use of transportation based on online applications Gojek app has been downloaded more than 125 million times by users as of December 2018. In fact, 18 months since the application launched in 2015, Gojek app was downloaded 70 million times. (Tekno Liputan6.com, Tuesday (5/3/2019). Every month, more than 100 million transactions occur on the Go-Jek platform. Various data was disclosed by Go-Jek himself as compiled by Kompas Tekno, Monday, 12/18/2017), from Kompas.id.

Hundreds of millions of these transactions not only from online transportation, Go-Jek also serves the food delivery business through the Go-Food feature. In addition to Go-Food, everyday complexity solutions are presented through Go-Mart, Go-Send, Go-Box, Go-Med, Go-Life, and others. There are 3 facts about female driver there are the rating of female drivers in Grab/Gojek is higher than that of men, most female partners choose to work without passengers and female drivers frequently revoked when they are carrying passengers.

Grab data shows there is an increase in the number of female driver partners in Indonesia by 490% in January 2018 compared to January 2017. Marketing Director of Grab Indonesia, in fact, Grab female driver partners drive 24% shorter than male driver partners, and spend 14% less time driving than male drivers. More women who choose working as a driver online because an effective and efficient work system, working hours are not bound, relaxed but there must be income. It also helps the economy or adds to their family income. Because most of them really like work and do not like to remain at home. It has been found that women who work as online ojek drivers are very potential in supporting their household economy. From Gojek internal data, the cancellation rate of consumers to female driver partners is 2.7 percent higher compared to male partners.

This research if focused to know customer perception and customer satisfaction of online taxi services from female drivers and to know the service attributes that need to be improved based on service quality according to Kano Model.

2. Kano Model Methodology

2.1. Fundamental Kano Model Concepts

The Kano model was developed in 1984 by Noriaki Kano [1]. It aims to connect the requirements fulfilled by products or services with customer satisfaction and identifies three types of requirements that influence ultimate customer satisfaction. Figure 1 presents the fundamental concepts of the Kano model. [2]. The horizontal axis of the diagram indicates the extent to which a product aspect fulfills customer requirements and the vertical axis indicates the extent to which customers are satisfied with the product or service. The four major types of requirements are must-be, one-dimensional, indifferent and attractive. From the figure 1, the Kano Model is divided into 4 categories:

a. Category must be.
   The variables included in the 'must have' category are variables which if this variable is not in a service, the customer will be disappointed. But if this variable is in a service it will not increase customer satisfaction.

b. Category One-dimensional.
   The variables included in the 'one dimension' category are variables which if this variable is in a service will give satisfaction to its customers. Conversely, if this variable is not in a service then the customer will be disappointed.

c. Category Very attractive.
   The variables included in the 'very interesting' category are variable which if this variable is in a service will give satisfaction with customers. But if this variable is not in a service then customers will not be disappointed.

d. Category Indifferent
   The variables included in the 'normal' category are variables which if this variable exists or does not exist in a service will not give satisfaction to its customers and also will not disappoint its customers.
Figure 1. Kano Model

1.2. Kano evaluation table
From the evaluation table (table 1) to count and summarize the results [4]. The abbreviations used in the evaluation table represent one-dimensional requirements (O), attractive requirements (A), must-be requirements (M), indifferent requirements (I), questionable requirements (Q) and reverse requirements (R). For instance, if one respondent chose “I like it” for a functional question and answered “I can live with it” for a dysfunctional question, the tested product or service feature would be classified as an attractive requirement (A). For indifferent requirements (I), the customer is neither satisfied nor dissatisfied if the product, service or process is dysfunctional or fully functional with regard to that particular aspect. Questionable requirements (Q) represent results that exhibit contradictory answers. Reverse requirements (R) signify that the product or service feature is not wanted by customers and that they strongly expect the reverse [3]. One-dimensional, must-be and attractive requirement, together with indifferent requirements, are primarily what we are investigating in the Kano model analysis. The priority order should follow M > O > A > I.

3. Result and discussion
3.1 Analysis of questionnaire results
The respondents involved were 133 respondents divided into gender, age, education and frequency using online transportation. Figure 2 is a diagram view of the respondent.

3.2 Sampling Adequacy
Before distributing the questionnaire, the calculation of the number of samples is carried out. The calculations are as follows:

\[
p = \frac{\text{Return Questionnaire}}{\text{Distributed Questionnaire}} = \frac{37}{40} = 0.925 \quad (1)
\]

\[
q = \frac{\text{Not Return Questionnaire}}{\text{Distributed Questionnaire}} = \frac{3}{40} = 0.075 \quad (2)
\]

\[
N = \left( \frac{Z_{0.025}}{\sigma} \right)^2 = \left( \frac{1.96}{0.0525 \times 0.075} \right)^2 = 106.6044 \approx 107 \quad (3)
\]
Based on the calculation, the minimum sample is 107, while the total number of questionnaires distributed is 133.

### Table 1. Kano evaluation

| Customer Requirements | Like | Must-be | Neutral | Live With | Dislike |
|-----------------------|------|---------|---------|-----------|---------|
| Like                  | Q    | A       | A       | A         | O       |
| Must-be               | R    | I       | I       | I         | M       |
| Functional            | Neutral | R | I       | I       | I       | M       |
| Live With             | R    | I       | I       | I         | M       |
| Dislike               | R    | R       | R       | R         | Q       |

#### Figure 2. Respondent characteristic diagram

### 3.3 Calculation of Kano Coefficient Satisfaction

Customer satisfaction coefficient or Customer Satisfaction Coefficient indicates the magnitude of the influence of variables can affect satisfaction or customer dissatisfaction. The customer satisfaction coefficient is divided into two, namely coefficient of customer satisfaction level and coefficient of dissatisfaction level customer. According to [5] and [6] the coefficient of customer satisfaction (ES) and refer to Functional can be calculated by the equation as follows.
A = the number of 'very interesting' categories

\[ ES = \frac{A + O}{A + D + I + M} \]  

\[ ED = \frac{O + M}{A + O + I + M} \]  

- \( A \) = number of 'very interesting' categories
- \( O \) = number of 'one dimension' categories
- \( I \) = the number of 'normal' categories
- \( M \) = the number of categories 'must exist'

This value measures the level of customer satisfaction when the variable is realized in a service [7]. The value of the coefficient of the level of customer satisfaction ranges between 0 and 1. If the value is close to 1 then the variable is getting more effect on customer satisfaction. Conversely, if the value is close to 0 then these variables increasingly have no effect on customer satisfaction (ED and refer to Dysfunctional).

| Service Attribute | Code | A | M | O | R | I | Q | Total | Category |
|-------------------|------|---|---|---|---|---|---|-------|----------|
| Appearance        |      |   |   |   |   |   |   |       |          |
|                   |      |   |   |   |   |   |   |       |          |
| The driver's appearance is neat, clean and fragrant. | 2 | 44 | 21 | 40 | 0 | 21 | 7 | 133 | Attractive |
|                   |      |   |   |   |   |   |   |       |          |
| Main Skill        |      |   |   |   |   |   |   |       |          |
|                   |      |   |   |   |   |   |   |       |          |
| The vehicle used by the driver is complete (for example: a complete mirror, turn signal function, horn function, etc.) | 4 | 18 | 17 | 80 | 2 | 14 | 2 | 133 | Performance |
|                   |      |   |   |   |   |   |   |       |          |
| Soft Skill        |      |   |   |   |   |   |   |       |          |
|                   |      |   |   |   |   |   |   |       |          |
| The driver knows the location of the destination address | 9 | 53 | 7 | 22 | 1 | 43 | 7 | 133 | Attractive |

Table 2. Kano evaluation of taxi online service attribute
### Table 3. Summary of Kano category (based on functional-dysfunctional)

| Dimension | Service Attribute | Code | Functional | Dysfunctional | Category  |
|-----------|-------------------|------|------------|---------------|-----------|
| Appearance| Impression when getting a female driver | 1    | 1.105      | -0.18         | Indifferent |
|           | The driver's appearance is neat, clean and fragrant. | 2    | 3.023      | 2.361         | Attractive |
| Main Skill| Drivers use complete attributes (for example: wearing a jacket, helmet, wearing shoes) | 3    | 3.293      | 2.955         | Performance |
|           | The vehicle used by the driver is complete (for example: a complete mirror, turn signal function, horn function, etc.) | 4    | 3.376      | 3.278         | Performance |
| Soft Skill| Driver is friendly (gives a smile, greetings) | 5    | 3.504      | 2.759         | Performance |
|           | Drivers are proactive (example: helping lift/ lower passenger property) | 6    | 2.113      | 1.481         | Indifferent |
|           | Drivers have knowledge of traffic rules (traffic signs) | 7    | 3.248      | 3.286         | Performance |
|           | Drivers are capable of driving (example: not reckless) | 8    | 3.406      | 3.451         | Performance |
|           | The driver knows the location of the destination address | 9    | 3.083      | 1.805         | Attractive |

### Table 4. Kano coefficient satisfaction

| Dimension | Service Attribute | Code | Satisfaction | Dissatisfaction | Category  |
|-----------|-------------------|------|--------------|-----------------|-----------|
| Appearance| Impression when getting a female driver | 1    | 0.254        | 0.000           | Indifferent |
|           | The driver's appearance is neat, clean and fragrant. | 2    | 0.667        | -0.484          | Attractive |
| Main Skill| Drivers use complete attributes (for example: wearing a jacket, helmet, wearing shoes) | 3    | 0.775        | -0.643          | Performance |
|           | The vehicle used by the driver is complete (for example: a complete mirror, turn signal function, horn function, etc.) | 4    | 0.760        | -0.752          | Performance |
| Soft Skill| Driver is friendly (gives a smile, greetings) | 5    | 0.800        | -0.569          | Performance |
|           | Drivers are proactive (example: helping lift/ lower passenger property) | 6    | 0.438        | -0.154          | Indifferent |
|           | Drivers have knowledge of traffic rules (traffic signs) | 7    | 0.700        | -0.754          | Performance |
|           | Drivers are capable of driving (example: not reckless) | 8    | 0.791        | -0.814          | Performance |
|           | The driver knows the location of the destination address | 9    | 0.600        | -0.232          | Attractive |
3.4 Kano Quadrant

After calculating the satisfaction (ES) or functional coefficient and the dissatisfaction (ED) or dysfunctional coefficients, the next is entering the attribute value into the Kano model quadrant. The results of the Kano quadrant mapping can be seen in figure 3 and figure 4.

![Figure 3. Kano Categories of Service Attribute (Functional-Dysfunctional)](image1)

![Figure 4. Kano Categories of Service Attribute (Satisfaction-Dissatisfaction)](image2)
4. Conclusion
The results of processing show that from 9 attributes, there are 5 attributes including performance
categories, there are attribute 3-Drivers use complete attributes (for example: wearing a jacket, helmet,
wearing shoes), attribute 4-The vehicle used by the driver is complete (for example: a complete
mirror, turn signal function, horn function, etc.), attribute 5- Driver is friendly (gives a smile,
greetings), attribute 7-Drivers have knowledge of traffic rules (traffic signs) and attribute 8-Driver is
capable of driving (example: not reckless).

There are 2 attributes that are indifferent categories, namely attribute 1-Impression when getting a
female driver and attribute 6-Driver is proactive (example: helping lift / lower passenger property). While there are 2 attribute that is categorized as attractive namely attribute 2-The driver's appearance
is neat, clean and fragrant and attribute 9-The driver knows the location of the destination address.
Improvements are made to attribute 2, which is to seek out female drivers the driver must always look
neat, clothes look clean, not look dirty, and use body perfume even though working on the road.
Improvements are made to attribute 9, which is to seek out female drivers to better understand the
location of the desired destination by the customer, for example, can find the fastest route, can avoid
traffic jams and get to know the location well.

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