

# VARIABLE ANALYSIS OF IMPROVING THE QUALITY OF SERVICE DELIVERY PACKAGE BY USING IMPORTANCE PERFORMANCE MATRIX METHOD AND KANO MODEL

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*The Best quality of service must be provided by companies for customer satisfaction in the service delivery package sector. Improved quality of service is done by knowing the variable quality of Parasuraman dimension, and then using the integration between two methods; Importance Performance Matrix and Kano Model, which results in the category of Kano on any variable quality of service. The results were analyzed for each category (must be, one-dimensional, attractive, and indifferent) of integration that is expected to improve the quality of service.*

*Key words: Customer Satisfaction, Quality of Service , Importance Performance Matrix , Kano Model.*

## 1. INTRODUCTION

Competition delivery services package are very significant thing at the moment, from this competition makes the consumer more selective and think critically in choosing and using the type of delivery services in accordance with the needs and satisfaction of the services provided, so that the companies vying to evaluate and improve the performance in order to improve quality and provide the best service to consumers, thus becoming loyal .

The issue resolved by using the integration of two methods: the Importance of Performance Matrix (IPM), with five dimensions of Service Quality in IPM questioner which measures the level of customer satisfaction and Kano models to categorize the variables of service, where both of methods mutually integrated to produce improvement priorities which serve to improve the quality of service. The purpose of this study was variable analysis of improving the quality of service using Importance Performance matrix and Kano model.

## 2. THEORETICAL BACKGROUND

The common definition of service quality or SERVQUAL expressed by Zeithaml (1990) that "customer's judgment of the overall excellence or superiority of a service"

Thus the service quality can be defined as the difference between reality and expectations of customers on services received.

According to Parasuraman (1990), there are five dimensions of Service Quality as follow:

1. Tangibles or physical evidence of a company's ability to demonstrate its existence on external parties.
2. Reliability is the ability of companies to provide services as promised accurately and reliably.
3. Responsiveness is a willingness to help and provide fast and accurate service to the customer, with the deliverance of clear information.
4. Assurance and certainty is knowledge, courtesy, and the ability of the company's employees to gain the customers' trust towards the company.
5. Empathy, which gives genuine concern and individually or personally.

Importance Performance Matrix method has four quadrants with different priorities depending in which there are attributes of service quality. The Results of Importance Performance Matrix is in the form of a map of the position of each of the attributes of service quality in the four quadrants that have different priorities. The fourth quadrant, namely:

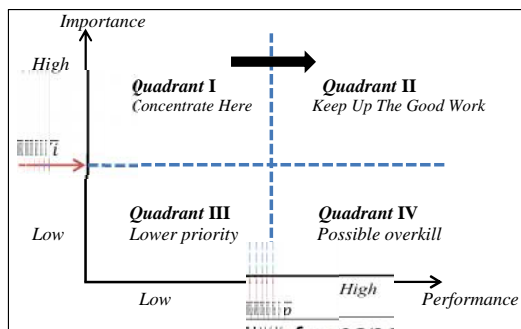


Figure 1. Importance Performance Matrix Improvement Quadrant

Quadrant 1 (concentrate here), the region that includes the attributes that are important to customers but in fact these attributes are not satisfying as expected, in other words the satisfaction level is still low. Attributes that include in this quadrant should be improved. Quadrant 2 (keep up the good work), this region contains the attributes that are important to customers and are in accordance with perceived by customers, in other words, a relatively high level of satisfaction. These attributes must be maintained because all of these attributes make a good product or service in the eyes of the customer. Quadrant 3 (low priority), this region contains the attributes that are considered less important by customers and in fact the performance is not too special. Improvement of these attributes can be reconsidered because of its effect on the benefits perceived by the customer is very small. Quadrant 4 (Possible overkill), this region contains the attributes that are considered less important by customers but already satisfies them even too much. Attributes that are in this quadrant are considered to have a level of service that is too excessive for the benefit of a low level, so that it can be reduced so that companies can save costs.

Kano model is a model developed by Prof. Noriaki Kano. Kano models aimed at categorizing the variables of a product or service on the basis of how well the product or service is capable of satisfying the wants / needs of the consumers. Kano model can be seen in Figure 2

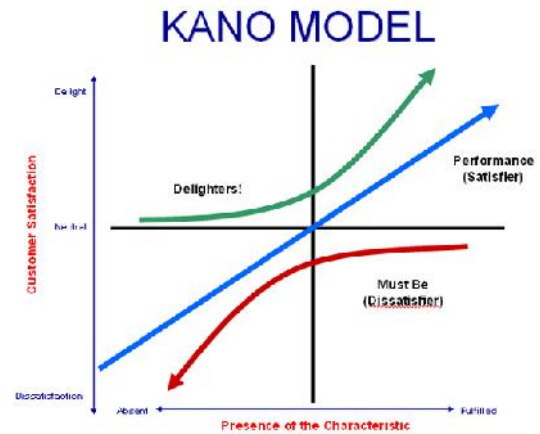


Figure 2.Kano Model

Kano models are divided into three (3) types of needs the product / service satisfaction levels of consumers, three types are as follows:

1. Must be requirements (basic attributes), in this type, consumer will unsatisfied if the performance of the attributes is low (dysfunctional), but the satisfaction of consumers will not increase even if the performance attributes have been met, because consumers think that it is supposed to exist in the product / services.
2. One dimensional requirements (attributes expected), this type of consumer, satisfaction level will be increased if the performance attributes in accordance with the wishes of consumers; functional attributes. The more functional attributes, the higher the satisfaction level.
3. Attractive requirements (attributes pleasure), this type of customer satisfaction levels will rise up with rising performance attributes. But the decline in performance attributes will not lower the level of satisfaction.

Type the needs of your products / services are basically just giving threecategories, but the response given by a consumer allow the emergence of other categories such as I (Indifferent), R (Reverse), and Q (Questionable). Category I (Indifferent) is the

type of requirement which does not give effect to the satisfaction of the consumer or in other words whether there is any performance attributes will not give satisfaction and dissatisfaction to the consumer. R (Reverse) is the type of requirement which is the opposite of the one-dimensional, where consumer satisfaction will be high when the performance attributes not work properly. Q (Questionable) is the type where consumers sometimes need to be satisfied/ dissatisfied if attribute in this category given or not given. Kano model in the measurement of customer satisfaction with attributes is done in several steps. The steps in the Kano models are as follows:

1. Identify the attributes of a product or service.
2. Preparation of the questionnaire, the questionnaire designed Kano models consist of two types of questions are the type of questionnaire functional and dysfunctional Example questionnaire Kano model can be seen in Table 1

Table 1. Example questionnaire kanomodel

Customer requirement functional form	1. I like it that way
	2. I must be that way
	3. I am neutral
	4. I can live with it that way
	5. I dislike it that way
Customer requirement dysfunctional form	1. I like it that way
	2. I must be that way
	3. I am neutral
	4. I can live with it that way
	5. I dislike it that way

3. Spread the questionnaire.
4. Process the results of the questionnaire , both types of questionnaires Kano models and classified into six (6) categories Kano namely: A (Attractive), M (Must-Be), O (One-dimensional), I (Indifferent), R (Reverse), and Q (Questionable). The results of the questionnaires functional and dysfunctional subsequently translated into the evaluation matrix Kano. Kano evaluation matrix can be seen in Table 2.

Tabel2. Kano Evaluation Matrix

Customer Requirements		Dusfunction				
		1. Like	2. Must-be	3. Neutral	4. Live with	5. Dislike
Functional	1. Like	Q	A	A	A	O
	2. Must-be	R	I	I	I	M
	3. Neutral	R	I	I	I	M
	4. Live with	R	I	I	I	M
	5. Dislike	R	R	R	R	Q

Note:

- A = Attractive, M = Must be,
- O = One dimensional, I = Indifferent,
- R = Reverse, Q = Questionable

5. Corrective actions.

Histogram generation and matrix kano models obtained from the calculation coefficient customer satisfaction (CS) and the coefficient of dissatisfaction's customers (DS) proposed by Boger, et al., (1993, in Lai, et al, 2004) . Coefficient of customer satisfaction and dissatisfaction can be calculated using the formula :

Coefficient of customer satisfaction

$$CS = \frac{fA + fO}{fA + fO + fM + fI} \quad (1)$$

Coefficient of customer dissatisfaction

$$DS = \frac{fO + fM}{(fA + fO + fM + fI) \times (-1)} \quad (2)$$

ote:

- A = Total value category attrctive in the variable i-th
- M = Total value category Must Be in the variable i-th
- O = Total value category One dimensional in the variable i-th
- I = Total value category indefferent on the variable i-th

Calculating the coefficient of satisfaction and dissatisfaction on the Kano models do not include a category R (Reverse) and Q (Questionable) in the calculation, due to the category of R (Reverse) indicates that the thought of respondents of the questionnaire against the grain surveyor in this category are the reverse is the opposite of categories one dimensional, whereas the Q (Questionable) can be eliminated from the analysis until the confusion experienced by respondents can be completed or in other words the results obtained in this category is still doubtful to be included in the calculation of the coefficient of satisfaction and dissatisfaction .

### 3. RESEARCH METHOD

The research methodology is the steps being taken to find a solution that consists of the identification phase, the identification of methods of analysis, identification of research variables, identifying the characteristics of respondents, the sampling design and formulation of the problem, gathering research data consists of raw data questionnaire Importance of Performance Matrix and Kano models, processing data, analysis, and conclusion of the data processing

### 4. RESULT AND DISCUSSION

The results are the first quadrant on the Importance of Performance Matrix needs to be improved because it is a priority quadrant. Variables that are in the first quadrant is a variable that is considered very important by consumers, but in reality the services provided do not give satisfaction to the consumer because of the value of the perceived level of satisfaction is low, so that the variables that are in the quadrant should be increased. See figure below (figure 3).

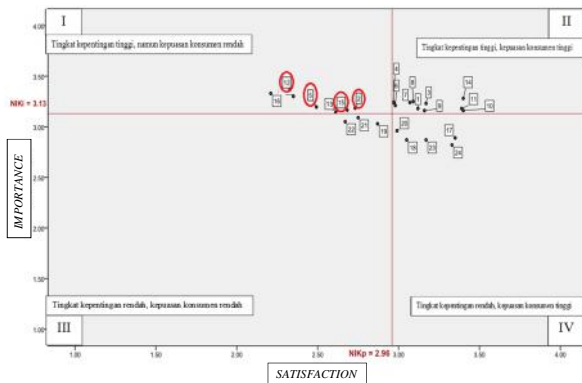


Figure 3. IPM Result

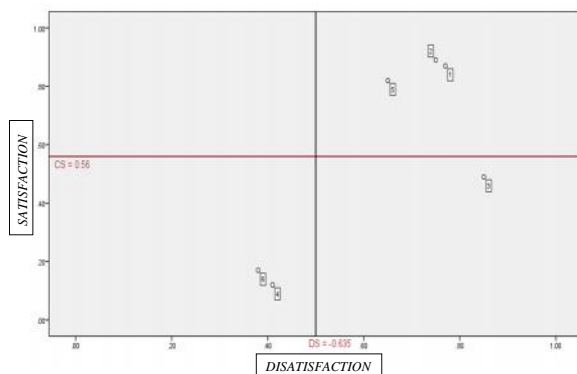


Figure 4. Kano Result

Table 3. Kano Result

No	Variable	Variable Description	Kano Category
1	V-2	The clerk serves transaction quickly and precisely ( maximum service time of 10 minutes to 1 consumer ) .	O
2	V-5	Rapid response of customer service to consumer complaints	O
3	V-12	Collateral in the form of compensation for the shipment damaged , late or misdirected ( insurance for the shipment of valuables) .	M
4	V-13	There are suggestion boxes for improved services.	I
5	V-15	Advertisement to promote the services that will be given will attract consumers (display brochures or advertising , as well as providing discounts for certain months )	O
6	V-16	The availability of sufficient parking, lot neat and clean (it can accommodate two-wheeled vehicles and four wheels , there is a road sign, and there are no garbage scattering ) .	I

The following are the explanation for the table of the Kano result.

#### ATTRACTIVE CATEGORY ANALYSIS (A)

Attractive category is the category of pleasure that would give more satisfaction to the consumer if this category is fulfilled but, consumer satisfaction will not be further decreased if this category is not fulfilled. This category also distinguishes some companies with other companies because it has its own uniqueness or specialty. From the results of Kano Model, no more variables are included in this category means that the company has had a few variables that give satisfaction to the consumer and differentiate the company's competitors at the moment, in this case; the ability to deliver the goods to the remote area.

#### ONE DIMENSIONAL CATEGORY ANALYSIS (O)

Category One Dimensional is moved linearly categories where customer satisfaction will increase along with the boost of services provided.

In the Kano result, there are three variables, namely V-2, V-5, and V-15 means that these three variables if being improved by the company, it would also improve the level of customer satisfaction.

#### MUST BE ANALYSIS CATEGORY (M)

Category Must Be is a category which, if not fulfilled, then the consumer will be very dissatisfied because the variables existing services in this category are considered as basic variable and there should be in the service. The results

showed a model Kano in this category, there is one variable that is V-12, which means that a guarantee for replacement of lost or damaged packages is the basic variables that must be provided by the company. By not fulfilling this category, means is making the consumer very unsatisfied.

#### INDIFFERENT ANALYSIS CATEGORY

(I)

Indifferent category is a category which, if fulfilled or not fulfilled will not have a significant influence on satisfaction. Results Kano models, there are two variables that are included in this category is the V-13 and V-16, meaning that the variable services such as suggestion boxes and a parking lot is not the most important variable for the consumer, so it does not need to be upgraded.

### 5. CONCLUSION

The order of increase for each category listed on the diagram Kano model are:

1. Category "must be" variable compensation guarantee in the form of shipments of damaged, delayed, or misdirected. Category "must be" is the first category that must be fixed because this category is the basic thing that should be owned by the company in its service to consumers, and in this category of consumer dissatisfaction will be higher if the variable is not met which resulted in loss of consumer's trust because consumers would think that the basic service is not provided to the fullest, how will the company fulfill the more important things they need.

2. Next is Category "one-dimensional", a variable that is in this category that serves transactions quickly and accurately, such as; responsiveness of customer service to a consumer complaint, the ads for the promotion of the services rendered to attract consumers. This category is the category that needs to be improved after "must be" because this category is a category that is moved linearly so that needs to be improved, if the variable in this category is

continuously to be improved, so the customer satisfaction increased.

3. Furthermore, namely the category of "attractive" in this study there are variables that are in this category, but this category is also necessary to improve the quality for the variables that are in this category is the variable that gives the difference between the company and its competitors, this category is in the third priority after category "must be" and "one dimensional" because if this category is not met, then the customer satisfaction is not much reduced and still be on the average position.

4. The last category is "indifferent", the variables contained in this category are including; availability of suggestion box to improve quality of services and the availability of adequate parking areas which are neat and clean. This category does not provide too significant impact on satisfaction customer in the quality of service at the company, so this is the last category to be taken if it wanted to be improved.

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