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The Mapping of Refined Sugar Consumers' Preferences using the Kano Method Based on the Supply Chain Operation Reference (SCOR) Dimensions

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Abstract
In today's era of globalization , goods distribution of services / products to consumers is one of the important things considered by companies. The distribution service of products to consumers is one key to the success of a company , because when customer satisfaction is not considered, the loyalty of consumers will turn to other companies which are able to meet their satisfaction. So, as an industry, the administrators should consider and develop the factors that affect customer satisfaction / user industrial so that the supply chain of the businesses still exis, sustainable and trusted by the consumers. The objective of this study is to investigate the performance of the supply chain companies / refined sugar mills that provide satisfaction to the consumer manifested in the Kano category. The second objective is to compare the results of the mapping of consumers (user industries) with the management of the factory / company (administrator industries). The instrument used to measure was a questionnaire which consists of functional question and dysfunctional question grouped in 5 dimensions SCOR (plan, source, make, deliver and return). The results say that industrial users respondents / consumers choose a category attractive to plan dimensions , one dimensional categories for the third dimension is the source , make, and deliver and must be category to the dimensions of the return. Meanwhile, according to industry managers, the SCOR's all five dimensions with a one dimensional category are chosen.
Keywords : Kano categories, SCOR dimensions, consumers' satisfaction

1. Introduction

In today's era of globalization, goods distribution of services / products to the consumer is one of the important things considered by companies. Therefore, the distribution services of products to consumers is one key to the success of a company. Because if the customers' satisfaction is not considered, the loyalty of the consumers would turn to another company that is able to meet their satisfaction in this regard is the satisfaction of the supply chain performance. Due to the high consumers' complaints about the supply chain services requiring the company to improve its performance. Therefore, the company needs to review the level of service that has been granted, and determine its position in the eyes of the consumers in terms of quality of product distribution services and customers' satisfaction over the services given. It is conducted in order to establish a good image in the eyes of the consumers, because if performance improvements in terms of quality of service is not conducted the consumers' satisfaction will continue to decline and consumers' complaints on the performance of the supply chain company will continue to increase. One of the indicators to build a good image in the eyes of consumers is the measurement of the level of consumers' satisfaction. Then, the results of these measurements become a basis for supply chain performance improvement in the future to achieve higher consumers' satisfaction, because customers' satisfaction is one of the factors of success for any company.

In general, the management of a company thinks that by providing service X, the customers will be satisfied and loyal. But, in fact not all services when applied / met will satisfy consumers. Sometimes consumers think them as mandatory (*must be*) in the supply chain meaning that if the service is available, it does not increase consumers' satisfaction, otherwise if it is not, the consumers are not satisfied. There are services that are one-dimensional in the sense that if there is a service, the customers are satisfied and vice versa if there is no service then the customer is not satisfied. The attractive category, if the service is provided the consumers are very satisfied, otherwise if there is no such service they are not disappointed. In addition to these three categories there are three other categories: indifferent, reverse and questionable. If the availability of a service has no effect on customer satisfaction, the service is included in the indiffrent category. The reverse category is the opposite of the one-dimensional, if the service takes place undue then the level of customers' satisfaction will be higher than those of with the service that goes well. The questionable category sometimes means the consumers are satisfied or dissatisfied if the service is provided or not. Those six categories were first proposed by Noriaki Kano, a method that is known as Kano. The research question that will be answered in this paper is how to map consumers' preferences over the service performance of the supply chain of refined sugar as measured by the

Kano method based on the SCOR dimensions. The purpose of the study is to determine the performance of a company's supply chain / refined sugar factory which gives satisfaction to the consumers manifested in the Kano category. The second objective is to compare the results of the consumers mapping with which of the factory management / company.

2. The Kano Model

The Kano model was developed by Professor Noriaki Kano (Kano, 1984), this model was designed based on the concept of consumers' quality and provided a simple ranking scheme. This concept distinguishes between attribute baseline and attribute differentiation. The Kano model is a great way to visualize the characteristics of products to avoid differences of opinion within the design team. Kano model also gives a precise methodology for mapping consumer responses into a model. The Kano model can also demonstrate the complex relationship between attribute satisfaction of consumer needs.

The identification of the consumers' desires is done by classifying the consumers' needs, and then draw up the steps to meet those needs. In classifying the consumers' needs, classifying attributes is conducted according to the Kano model as follows, [Widodo, 2003:24-25]

- Must be or basic needs category
  It is the consumers / customers' desires which are assumed that there must have been in a product. The presence of an attribute in the product will not increase the consumers' satisfaction and if the attribute is omitted it will disappoint the consumers. Basic needs are consumers' unspoken desires and sometimes can not be identified as a desire.
- One-dimensional or performance needs category
  In this category the level of consumers' / customers' satisfaction is related in line with attributes works, if the attributes works are high then the consumers' or customers' satisfaction will be higher as well. The performance needs is the consumers' unspoken desire whereby if an attribute is not available in a product it will be disappointing and if there is, it will add to the satisfaction. This category is a decent place for the development of products in a better way.
- Attractive or excitement needs category
  In this category the level of consumers' satisfaction to the presence of an attribute will reach the highest level and if the attribute is removed, it will reduce the consumers' satisfaction toward the product. The excitement needs is the consumers'unspoken desires about a product.
  Kano Model Graphs is shown in Figure 1.

There should be a concern that the consumers categories according to the classification of consumers' needs in the Kano model are always dynamic, meaning that this classification will always change over time. Now a product could be at the *excitement needs* level but at other times, it will turn into the *performance needs* level or *basic needs* level or currently in the basic needs level at other times at the *performance needs* or the excitement needs level.

In some literature, for all three of the above categories different terms are used, they are: *must be* for the *basic needs*, *one-dimensional* for the *performance needs* and *attractive* for the *excitement needs*. Beside those three categories, there are still three other categories, namely *reverse, indifferent* and *questionable*. If the availability of a service has no effect on consumers' satisfaction, the service is included in the *indifferent* category. The *reverse* category is the opposite of the *one-dimensional* category where high levels of performance on the attributes leads to low levels of consumers' satisfaction. The questionable category means that sometimes consumers are satisfied or dissatisfied if the service is provided or not [Widiawan, 2004:38-39].

2.1. The Kano Evaluation Table

The Kano evaluation table is a table that is used to classify consumers' responses to the questionnaire. As previously explained that the questionnaire given is divided into two parts, namely the functional and dysfunctional and thus the responses received are also divided into the same parts. The Kano evaluation table is used to see a couple of responses between the functional and dysfunctional. The general form of the Kano evaluation table is as follows table 1.

This table is a translation of the graph on the Kano Model where 22 sell between 25 sell in the Kano evaluation table can be mapped in a chart with the exactly same and the general shape of the graph and can be formed from depiction of this table. But not all of the images on the graph of the Kano model present the Kano evaluation table consistently.

2.2. The SCOR (*Supply Chain Operation Reference*) Model

The SCOR is a reference model of supply chain operations. The SCOR is essentially also a process-based model, this model integrates three main elements in management, namely *business process reengineering*, *benchmarking* and *process measurement* into a cross-functional framework in supply chain.

The SCOR divides supply chain processes into 5 core processes, they are *plan, source, make, deliver* and *return*. Those five processes work as described as follows : (Pujawan, 2005)

- *Plan* is a process that balances demand and supply to determine the best course of action in meeting the needs of procurement, production and delivery. *Plan* includes a process of assessing the needs of the distribution, inventory planning and control, material planning, production planning, capacity planning and adjustments making (*alignment*) supply chain plan with financial plan .
- *Source* is a process of procurement of goods and services to meet the demand. Those processes include deliveries scheduling from suppliers, receiving, checking and authorizing payment for delivered goods and so on. This type of process can be different depending on what goods purchased including *stocked, make-to -order* or *engineer-to-order products* .
- *Make* is a process of transforming raw materials / components into products that consumers want. The desire of *make* or production can be done on the basis of the forecast to meet the target stock (*make-to-stock*), on the basis of orders (*make-to-order*) or *engineer-to-order*. The processes involved here include production scheduling, production activities and quality testing, managing semi-finished goods (*work-in -process*) , maintains production facilities and so on .
- *Deliver* is a process to meet the demand for goods and services. It usually includes order management, transportation and distribution. The processes involved are handling orders from customers, choosing the delivery service company, handling the finished product warehousing activities and sending the bill to the customers.
- *Return* is a process of refunding or accepting return of products for various reasons. The activities involved include identifying product conditions, requesting a flaw return authorization, scheduling the return and refund. Post-delivery customer support is also a part of the return process.

The steps of service quality measurement using the Kano method that has been adapted to the SCOR:

- Step 1: Identifying the attributes. Identification is done by classifying the attributes based on the SCOR. From those attributes, a pre-questionnaire grouped according to the SCOR dimensions is prepared.
- Step 2: The Kano pre-questionnaire test with the SCOR dimension. The Kano pre-questionnaire is distributed to nine consumers to identify which questions deemed unnecessary by the consumers.
- Step 3: Questionnaire
  The preparation of the questionnaire used to determine consumers' preferences is conducted
- Step 4 :Steps of classification based the Kano model
- Step 5 : Corrective action

In general, the guide for organizations in determining the targets for the Kano categories is by trying to meet all the attributes *must be*, having a better performance than the competitors in the *one-dimensional* attributes, and including the *attractive* attributes different from the *competitors*.

3. Methods

This study was conducted in one of refined sugar mill in Cilegon, Banten province. This research was conducted in form of descriptive research, which is a type of research that aims to describe a systematic, factual and accurate information about the facts and the natures of an object or the specific operation (Sinulingga , 2011) . The study is also a survey that is a part of a descriptive study.

Initial data collection to draw up a questionnaire was conducted by interviewing consumers who had significant influence on the company. The consumers as respondents who became the sample were very influential consumers for the company such as the products subscribers with the largest capacity .

The preparation of the questionnaire was based on the dimensions of the supply chain operations reference (SCOR), which consisted of five dimensions namely plan, source, make, deliver and return. The questionnaires were given to 9 consumers (*user industries*) consisting of food, beverage and pharmaceutical and 4 company management experts of refined sugar factory (*administrator industries*). After the data were collected, the validity and reliability test was conducted to the questionnaire, each for function and dysfunction question on each attribute of the dimensions of the SCOR. If it is valid and reliable, the data is declared eligible for use in this study. Further, it was processing and analysis of the data using calculations performed as described above, in order to map the consumers' preferences the Kano model with the SCOR dimensions was used . Then a comparison between the management's assessment on the performance of supply chain and the consumers' ratings of the supply chain was conducted. The expected conclusion was that the consumers' preferences towards the performance of the supply chain were gained, the dimensions of what supply chain services, including which category. Besides, a description of the suitability of the management's perception (*administrator industries*) and the consumers of refined sugar (*user industries*).

4. Results and Discussion

The Preference of The Consumers of Refined Sugar

The data collected in the Kano Model consisted of primary data collected by recapitulating the results of the

questionnaires from the three industries namely food industry, beverage industry and pharmaceutical industry. The questionnaires were distributed to user industries / consumers made based on the SCOR dimensions: *plan, make, source, deliver* and *return*. The respondents in this study were the user industries of refined sugar which knew and felt the performance of the supply chain service of refined sugar. As the comparison was administrator industries of refined sugar as the provider of supply chain service of refined sugar.

The questionnaires distributed to customers / consumers and administrators (*administrator industries*) consisted of two categories. The first category (*functional*) measured the level of interest / desire of the customer / consumer in service attributes of refined sugar supply chain performance using questions that were in form of positive sentences. For example, the orders were actually fulfilled. While the second category (*disfunctional*) used sentences that were negative, for example the orders were not fulfilled. The data processing was conducted in stages from three kinds of industries using the Kano method that had been adapted to the SCOR dimensions. The steps in Kano method were as follow:

1. Attributes identification

The identification was done by grouping variables by attributes of the SCOR dimensions, from these attributes then a questionnaire grouped according to the SCOR dimensions was composed. The results of the SCOR attributes identification on the administrator industries and the user industries in functional form are presented in the Table 2. Meanwhile, the SCOR attributes in dysfunctional form are presented in Table 3.

2. The classification of attributes based on the Kano model according to consumer

From the data processing the recapitulation of the respondents from the consumer side (*user industries*) who gave their opinions on the performance of the supply chain of refined sugar that the answer had been classified into the Kano model attributes was obtained. The determination of the category of each attribute was based on the following table 4, Attributes classification into the Kano model (*based on respondents from the administrator industries' side*) is shown Table 5, and distribution of the user industries' respondents answers of sugar refined criteria into the Kano model in Table 6.

Furthermore, the respondents' answers to each of the attributes were classified into the Kano model. For each attribute was calculated the number of each of the Kano category was calculated. After each attribute was calculated the number of each category for each of the Kano attribute was further classified into the Kano category. This classification was using Blauth's formula (Walden, 1993), as follows:

- If the (one-dimensional + attractive + must be) > the (indifferent + reverse + questionable) so the grade obtained from the maximum data (one-dimensional, attractive, must be)
- If the (one-dimensional + attractive + must be) < the (indifferent + reverse + questionable) so the grade obtained from the maximum possible (indifferent, reverse, questionable)
- If the number of the (one-dimensional + attractive + must be) values = the (reverse + questionable indifferent) so the grade derived from the maximum value among all Kano categories is one-dimensional, attractive, must be, indifferent, reverse, or questionable.

The complete results are presented in the table 7 (Attributes classification into Kano model) and in Table 8 (The comparison of the mapping of administration industries and user industries /*Consumers* for each dimension of SCOR into the Kano model)

From the table 9, it can be seen that for the SCOR dimensions there are 3 dimensions that fit between the user industries and the administrator industries that is one-dimensional category respectively in the source, the make, and the deliver dimensions. As for the plan and the return dimensions between administrator industries and user industries have different opinions or views. At the user industries for the source, the make, and the deliver dimensions are categorized as one-dimensional, the plan dimension is categorized as attractive dimension and the return dimension is categorized as must be. While all dimensions of the SCOR (*plan, source, make, deliver and return*) for the user industries are all categorized one-dimensional.

In this case, it means the user industries will be satisfied if the plan dimension of the supply chain performance is met very well but if the service is not met, they do not feel disappointed, While the source, the make, and the deliver dimensions if the supply chain performance is met, the user industries will feel very satisfied and if it is not met, then the user industries are dissatisfied / disappointed. As for the return dimension, the user industries feel that the return dimension is a basic need that must be met so that if the performance of the attributes is not met, they will give a bad rating to the company 's performance but if the performance improved the consumers will not rise much above the neutral .

Meanwhile the administrator industries think that if all dimensions of the SCOR are met the administrator industries will feel very satisfied and if the supply chain performances for all those dimensions are not met the administrator industries are not satisfied.

5. Conclusion and Suggestions

5.1. Conclusion

The results of the mapping of the the administrator industries' and the user industries' preferences, it can be

concluded up as follows

- Based on the respondents, the administrator industries argue that all SCOR dimensions (*plan, source, make, deliver and return*) are included in the category of one-dimensional, which means according to the administrator industries if all the services of the supply chain performance are met, they will feel satisfied and vice versa .
- Based on the SCOR dimensions embodied in the map of the Kano category, for user industries / consumers of refined sugar, the plan dimension is classified as attractive category which means if the performance of the supply chain are met very well the user industries will feel very satisfied but if the service is not met, the user industries do not feel disappointed. While what belongs to the one-dimensional is the source, the make, and the deliver dimensions which means wheter the performance of the supply chain is met, the user industries will feel satisfied, and if not met, the user industries will feel disappointed. While the return dimension is classified as the must be category which is a basic requirement that must be met so if the performance attributes are not met, the user industries will give a bad rating to the company 's performance but if the performance is increased, they will not increase the level of satisfaction.

5.2. Suggestions

- Based on the principle of quality, the focus on the consumers must be considered by the administrator industries as the service provider of supply chain performance, so the consumers will not turn to other administrator industries.
- The administrator industries must pay more attention to the performance of the supply chain, especially for the SCOR dimensions belonging to the one-dimensional category based on the results of the respondents of the user industries / consumer and administrator industries.

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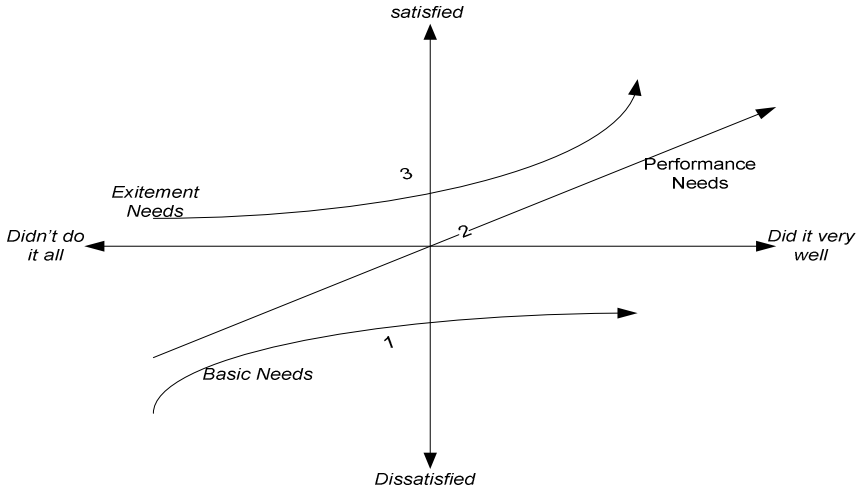

Figure 1. Kano Model Graphs
[Kay C Tan and Theresia A.Pawitra, 2001:421]

Table 1. The Kano evaluation table

Customer Requirement		Dysfunctional				
		1	**2**	**3**	**4**	**5**
Functional	**1**	Q	A	A	A	O
	2	R	I	I	I	M
	3	R	I	I	I	M
	4	R	I	I	I	M
	5	R	R	R	R	Q

[Kay C Tan and Theresia A.Pawitra, 2001:428]

Tabel 2. SCOR attribute identification in functional form

No.	ATRIBUT
	PLAN :
1.	No sudden changes in plans of ordered products
2.	Orders are truly fulfilled
3.	Performance of the supply chain is satisfying
4.	Value of products are met
	SOURCE :
5.	Capacity on demand product is met
6.	Product orders arrive on time according to the schedule
7.	Products match the ordered specifications
8.	No change in sales price at the time the product is received by user industries (consumers)
9.	Conducting evaluation on the performance of the supply of products
10.	Easy Procedures on purchase document
11.	There is no breach of contract agreements with administrator industries
12.	Giving discounts on booking with a certain amount
13.	Providing consistent product quality
14.	Conformity prices with quality products produced
	MAKE :
15.	High quality products
16.	There is a product stocks when needed
17.	Performing quality testing of products
18.	Products packing (packaging) do not easily leak
	DELIVER :
19.	No shortage of delivery capacity
20.	Products are delivered on time
21.	The accuracy and appropriateness of the number of products in each delivery
22.	The product is delivered to the correct destination
23.	Suitability of product packaging contents
24.	Able to handle transportation issues
25.	Well handled product results
26.	No error in sending bills to user industries
27.	There is no delay in bill payments to user industries
	RETURN :
28.	Easy procedures in returning rejected products
29.	The process of products replacement to user industries is not too late

Table 3. SCOR attribute identification in dysfunctional form

No.	ATRIBUT
	PLAN :
1.	Sudden change in plans of ordered products
2.	Orders are not met
3.	Supply chain performance is not satisfying
4.	Value of product is not met
	SOURCE :
5.	The capacity of the product received does not match orders
6.	Product orders do not come on time as scheduled
7.	Products do not match with the ordered specifications
8.	Changes in sales price when products are received by user industries (consumers)
9.	Not conducting evaluation on the performance of the supply of products
10.	Complicated procedures in purchase documents
11.	There is a breach of contract agreements with administrator industries
12.	Not giving discounts on booking with a certain amount
13.	Providing inconsistent quality products
14.	No price conformity with quality products produced
	MAKE :
15.	Low-quality products
16.	There is no stock of products in times of need
17.	Not testing the quality of the products
18.	Products packing (packaging) easily leaks
	DELIVER :
19.	Shortage of delivery capacity
20.	Products are not delivered on time
21.	Imprecision and inaccuracy of products in shipment
22.	The product is not delivered to the correct destination
23.	Incompatibility in product packaging contents
24.	Not able to handle transportation issues
25.	The product results are not well handled
26.	Errors in sending the bill to user industries
27.	There is a delay in payment of bills to user industries
	RETURN :
28.	Complicated procedures in returning rejected products
29.	The process of products replacement to user industries (consumers) is late

Table 4. The Distribution of respondents' answers of the administrator industries of refined sugar into criteria of the Kano model

Attribute numbers	Kano categories					
	One Dimensional (O)	Attractive (A)	Must Be (M)	Indifferent (I)	Reverse (R)	Questionable (Q)
1.	2	1	0	0	0	0
2.	0	0	3	0	0	0
3.	3	0	0	0	0	0
4.	2	0	0	1	0	0
5.	3	0	0	0	0	0
6.	1	2	0	0	0	0
7.	3	0	0	0	0	0
8.	0	0	2	1	0	0
9.	0	1	1	1	0	0
10.	0	2	0	1	0	0
11.	3	0	0	0	0	0
12.	0	3	0	0	0	0
13.	2	0	1	0	0	0
14.	1	0	2	0	0	0
15.	3	0	0	0	0	0
16.	1	0	2	0	0	0
17.	2	0	0	1	0	0
18.	3	0	0	0	0	0
19.	3	0	0	0	0	0
20.	0	3	0	0	0	0
21.	3	0	0	0	0	0
22.	2	0	0	1	0	0
23.	0	0	3	0	0	0
24.	0	0	2	1	0	0
25.	0	2	1	0	0	0
26.	3	0	0	0	0	0
27.	3	0	0	0	0	0
28.	3	0	0	0	0	0
29.	2	1	0	0	0	0

Table 5. Attributes classification into the Kano model (based on respondents from the administrator industries' side)

Attribute number	Kano categories			TOTAL	Kano categories			Total	Kano categories
	O	A	M		I	R	Q		Per attribute
1	2	1	0	3	0	0	0	0	O
2	0	0	3	3	0	0	0	0	M
3	3	0	0	3	0	0	0	0	O
4	2	0	0	2	1	0	0	1	O
5	3	0	0	3	0	0	0	0	O
6	1	2	0	3	0	0	0	0	A
7	3	0	0	3	0	0	0	0	O
8	0	0	2	2	1	0	0	1	M
9	0	1	1	2	1	0	0	1	M
10	0	2	0	2	1	0	0	1	A
11	3	0	0	3	0	0	0	0	O
12	0	3	0	3	0	0	0	0	A
13	2	0	1	3	0	0	0	0	O
14	1	0	2	3	0	0	0	0	M
15	3	0	0	3	0	0	0	0	O
16	1	0	2	3	0	0	0	0	M
17	2	0	0	2	1	0	0	1	O
18	3	0	0	3	0	0	0	0	O
19	3	0	0	3	0	0	0	0	O
20	0	3	0	3	0	0	0	0	A
21	3	0	0	3	0	0	0	0	O
22	2	0	0	2	1	0	0	1	O
23	0	0	3	3	0	0	0	0	M
24	0	0	2	2	1	0	0	1	M
25	0	2	1	3	0	0	0	0	A
26	3	0	0	3	0	0	0	0	O
27	3	0	0	3	0	0	0	0	O
28	3	0	0	3	0	0	0	0	O
29	2	1	0	3	0	0	0	0	O

Table 6. Distribution of the user industries' respondents answers of sugar refined criteria into the Kano model

Attribute number	Kano categories					
	One Dimensional (O)	Attractive (A)	Must Be (M)	Indifferent (I)	Reverse (R)	Questionable (Q)
1.	2	4	3	0	0	0
2.	2	3	1	3	0	0
3.	3	2	2	2	0	0
4.	2	4	2	1	0	0
5.	2	4	3	0	0	0
6.	3	2	2	2	0	0
7.	1	5	3	0	0	0
8.	3	2	2	2	0	0
9.	3	1	1	4	0	0
10.	3	2	2	2	0	0
11.	2	2	3	2	0	0
12.	2	3	2	2	0	0
13.	2	2	4	1	0	0
14.	1	4	2	2	0	0
15.	2	2	4	1	0	0
16.	3	2	2	2	0	0
17.	4	2	2	1	0	0
18.	3	2	2	2	0	0
19.	2	4	2	1	0	0
20.	4	2	2	1	0	0
21.	3	1	2	3	0	0
22.	4	2	2	1	0	0
23.	3	1	1	4	0	0
24.	2	2	4	1	0	0
25.	3	1	1	4	0	0
26.	4	2	2	1	0	0
27.	2	3	2	2	0	0
28.	2	2	4	1	0	0
29.	2	2	3	2	0	0

Table7. Attributes classification into Kano model (based on respondents from the user industries)

Attribute number	Kano categories			TOTAL	Kano categories			Total	Kano categories
	O	A	M		I	R	Q		Per attribute
1	2	4	3	9	0	0	0	0	A
2	2	3	1	6	3	0	0	3	A
3	3	2	2	7	2	0	0	2	O
4	2	4	2	8	1	0	0	1	A
5	2	4	3	9	0	0	0	0	A
6	3	2	2	7	2	0	0	2	O
7	1	5	3	9	0	0	0	0	M
8	3	2	2	7	2	0	0	2	O
9	3	1	1	5	4	0	0	4	O
10	3	2	2	7	2	0	0	2	O
11	2	2	3	7	2	0	0	2	M
12	2	3	2	7	2	0	0	2	A
13	2	2	4	8	1	0	0	1	M
14	1	4	2	7	2	0	0	2	A
15	2	2	4	8	1	0	0	1	M
16	3	2	2	7	2	0	0	2	O
17	4	2	2	8	1	0	0	1	O
18	3	2	2	7	2	0	0	2	O
19	2	4	2	8	1	0	0	1	A
20	4	2	2	8	1	0	0	1	O
21	3	1	2	6	3	0	0	3	O
22	4	2	2	8	1	0	0	1	O
23	3	1	1	5	4	0	0	4	O
24	2	2	4	8	1	0	0	1	M
25	3	1	1	5	4	0	0	4	O
26	4	2	2	8	1	0	0	1	O
27	2	3	2	7	2	0	0	2	A
28	2	2	4	8	1	0	0	1	M
29	2	2	3	7	2	0	0	2	M

Table 8. The comparison of the mapping of administration industries and user industries (Consumers) for each dimension of SCOR into the Kano model

Attribute number	Administrators' and consumers' preferences in the Kano model	
	Administrator industries	User industries
1	O	A
2	M	A
3	O	O
4	O	A
5	O	A
6	A	O
7	O	M
8	M	O
9	M	O
10	A	O
11	O	M
12	A	A
13	O	M
14	M	A
15	O	M
16	M	O
17	O	O
18	O	O
19	O	A
20	A	O
21	O	O
22	O	O
23	M	O
24	M	M
25	A	O
26	O	O
27	O	A
28	O	M
29	O	M

Table 9. The comparison of the mapping of administration industries and user industries based on the SCOR dimensions into the Kano model categories

SCOR dimensions	The distribution of administrator industries and user industries	
	Administrator industries	**User industries**
Plan	One Dimensional	Attractive
Source	One Dimensional	One Dimensional
Make	One Dimensional	One Dimensional
Deliver	One Dimensional	One Dimensional
Return	One Dimensional	Must Be