# LEVEL OF CUSTOMER SATISFACTION USING THE KANO AND ROOT CAUSE ANALYSIS (FISH BONE) METHOD IN INTERNET SERVICE PROVIDER COMPANIES (SP Product Case Study)

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**Abstract:** The study in this research uses the Kano method and root cause analysis to measure customer satisfaction and find out which attributes are maintained and which attributes are improved. After obtaining the attribute results, they are then implemented in a fishbone diagram to solve the root of the problem, so that a solution to the problem can be found. is at PT Telekomunikasi XYZ. The results of this research showed that customers of SP products were categorized as attractive at 40%, must be 4%, indifferent 28%, one dimensional 28%, according to calculations, the highest value of better (increase) was attribute 2 "SP products are easy to use" is 0.68. Meanwhile, the highest worse (decrease) value was attribute 3 "SP product completeness", with a value of -0.92.

**Keyword:** Root Cause Analysis, Fishbone, Tabulation Of Surveys, Extent Of Satisfaction Extent Of Dissatisfaction.

## INTRODUCTION

Nowadays internet services have almost become a primary need. Almost every second person is involved with internet facilities provided by various operators. the development of technology called the internet, has changed the pattern of social interaction, namely; business, economic, social and cultural interactions. The internet has made such a big contribution to society, companies/industry and government. The presence of the internet has supported the effectiveness and efficiency of company operations, especially its role as a means of communication, publication, and a means of obtaining various information needed by individuals, business entities, companies, governments or other institutions.

For internet users in big cities, internet services are provided by many operators. Due to business competition, of course each operator providing high-speed internet services, almost every house has internet facilities installed, the rapidly growing need for internet has given rise to various companies providing internet services. One of them is PT XYZ which is one of the Indonesian Telecommunication Companies, PT SP is a high-quality Internet access service for households and small and medium-sized businesses. This SP internet service is available in almost all parts of Indonesia. The advantage of SP services compared to other Internet Service Provider services is that SP uses ADSL (asymmetric digital subscriber line) technology, which delivers high-speed digital signals via telephony networks optimally for Internet content consumption, with data speeds from 384 kb/s to 10 Mb /s.

Currently, Indonesia can be said to be a potential market for internet service provider companies/ISPs (Internet Service Providers) in Indonesia. Based on data from APJII (Association of Indonesian Internet Service Providers), there are around 289 companies holding ISP (Internet Service Provider) licenses in Indonesia, with the main players being PT XYZ (SP product), CBN, Centrin, BIZnet, Comnets Plus, and Melsa. Not to mention the addition of cellular provider companies that have internet connection facilities, which are also expanding the internet service market, namely INDOSAT, Excelcomindo, Bakrie Telcom, Smart etc.

According to IndoTelkom (IndoTelko) data, PT XYZ wants to realize its target of reaching five million SP fixed broadband users this year. Currently there are 3.3 million regular SP users. PT XYZ aims to reach

five million customers this year. According to records, this State-Owned Enterprise (BUMN) has 3.12 million fixed broadband customers via SP products. Average Revenue Per User (ARPU) from SP in the first quarter of 2020, the average amount of profit obtained by the company PT Instant (SPIN). Customers in Bekasi experienced a decline due to frequent network disruptions, as one example of a case according to Posbekasi.com SP products.

The network at Bekasi Timur Regency Housing (BTR) Bekasi City experienced problems, customers asked for bill cancellation and will report it to the Indonesian Consumer Lambaga Foundation (YLKI). BTR residents, especially in Block E, SP products no longer function at all during the kick-off, namely since Sunday (19/4/2015) demands that Telkom not bill for April or May 2015 or at least cut the bill. Customers have contacted the PT SP decreases.

It cannot be denied that the use of developments in internet information technology has become a major need in society, so that many internet network provider companies have emerged that offer various kinds of internet products to customers. Currently, PT which is caused by several complaints about SP products.

To overcome this problem, the right strategy is needed to find out customer satisfaction and look for the root of the problem. The most appropriate method to use is the Kano method and root cause analysis. The Kano method is used to measure customer satisfaction based on the attributes of SP products.

There are several methods that can be used to measure the level of customer satisfaction with a product, one of which is the Kano method, the Kano method has been used by Erinsyah Maulia, A. Rahim, Rosnani Ginting in a journal entitled "Customer Satisfaction Analysis using the Kano Model Approach and the QFD application to improve the quality of banking services", the Kano method is used to categorize the attributes of customer desires into Kano categories and the Quality Function Deployment (QFD) method. This research uses a questionnaire as a research instrument. Through the results of distributing questionnaires, it is known that there are 10 desire variables needed by customers and they are grouped based on 4 Kano dimensions. The results of attribute categorization with Kano show that there are still attributes that are categorized as must be and one dimensional, meaning that it still needs some form of improvement from the bank management.

Another method used is Root Cause Analysis by Trisnal, Sugiharto Pujangkoro, Listiani Nurul Huda, in a journal entitled "Analysis of Lean Manufacturing Implementation with Lean Assessment and and Root Cause Analysis at PT. effective is that the previous operator did not complete the task on time, the stamping machine was damaged and the oven conveyor continued to run, the tray handle chain was loose and the stamping operator was negligent in carrying out his duties. The solution given to the root cause of the problem is to create visual controls that are attached to the communication board and Standard Operating Procedures (SOP), so that it is hoped that it will be able to increase the company's OLE by up to 80%.

Based on previous research, the author decided to use the Kano Method and Root Cause Analysis. because the Kano method and Root Cause Analysis are very suitable for finding customer satisfaction at the PT XYZ company. The instrument used was distributing questionnaires and processing them using the Kano method. The next stage was looking for the root of the problem using the root cause analysis method. SP products examine 4 attributes, namely product quality, service quality, price and promotion, while root cause analysis functions to find the root of existing problems in SP products. The data used in this research was obtained through a questionnaire adopted from an existing questionnaire. existed previously and was then developed by the author.

**RESEARCH METHODOLOGY**

The research method used in this writing is primary data collection. Primary Data is initial data collection which aims to find out in more detail the data relating to this research. This data collection was obtained from the type and source of primary data, namely in the form of data collected directly from SP product customers with a questionnaire adopted from a previously existing questionnaire, namely a research questionnaire on the influence of product quality, service quality, relationship quality on customer satisfaction and loyalty by I Wayan Sudastra, then the questionnaire was developed by the author in accordance with the research. Questionnaires were distributed to 112 respondents, with details in the table below.

**Table 1.** Distribution of Questionnaires

| NO | NAME OF PLACE | NAME OF STREET | NUMBER OF HOUSEHOLDS | NUMBER OF USERS |
|----|---------------|----------------|----------------------|-----------------|
| 1 | Green Residence | Dharmawangsa | 45 | 11 |
| | | Prapanca | 105 | 23 |
| | | Tirtayasa | 80 | 15 |
| | | Hang Tuah | 97 | 16 |

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| NO | NAME OF PLACE | NAME OF STREET | NUMBER OF HOUSEHOLDS | NUMBER OF USERS |
|---|---|---|---|---|
| 2 | PGP | Sunan Giri | 48 | 12 |
| | | Sunan Ampel | 30 | 18 |
| | | Murai | 42 | 1 |
| 3 | Sekitar Bekasi | - | - | 18 |
| | TOTAL | | | 112 |

From a total of 112 respondents, data was taken for only 100 respondents because the remaining 12 respondents were looked at manually and on average answered option 4, namely neutral, so the data was discarded for the 12 respondents who were considered invalid. The total number of questionnaires distributed in the East Bekasi Grand Residence area was 55 respondents, in Pondok Gede Permai 29 respondents, and around other Bekasi areas there were 16 respondents.

## RESULT AND DISCUSSION
### Customer Survey Tabulation
After recapitulating the respondents, the next stage is to count the number of each canoe category in each attribute. Determine the canoe category for each attribute using Blauth's formula as follows:
- if the total value is (O + A+ M) > (I+ R + Q) then the grade is obtained from the largest value between one dimension, attractive or must be.
- If the total value is (O + A+ M) < (I+ R + Q) then the grade will be obtained from the largest value between indifferent or reverse or questionable.

**Table 2.** Customer Survey Table

| ATRIBUT | A | M | O | I | Q | R | TOTAL | GRADE |
|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 49 | 4 | 20 | 0 | 11 | 100 | M |
| 2 | 5 | 13 | 48 | 22 | 0 | 12 | 100 | O |
| 3 | 5 | 54 | 15 | 25 | 0 | 1 | 100 | M |
| 4 | 23 | 25 | 5 | 13 | 0 | 34 | 100 | R |
| 5 | 7 | 28 | 33 | 30 | 0 | 2 | 100 | O |
| 6 | 6 | 26 | 16 | 25 | 0 | 27 | 100 | R |
| 7 | 11 | 38 | 18 | 19 | 0 | 14 | 100 | M |
| 8 | 7 | 36 | 19 | 21 | 0 | 17 | 100 | M |
| 9 | 7 | 36 | 11 | 27 | 0 | 19 | 100 | M |
| 10 | 9 | 37 | 12 | 24 | 0 | 18 | 100 | M |
| 11 | 8 | 27 | 16 | 29 | 0 | 20 | 100 | I |
| 12 | 10 | 29 | 17 | 27 | 0 | 17 | 100 | M |
| 13 | 12 | 38 | 16 | 25 | 0 | 9 | 100 | M |
| 14 | 10 | 29 | 26 | 22 | 0 | 13 | 100 | M |
| 15 | 7 | 22 | 30 | 38 | 0 | 3 | 100 | I |
| 16 | 8 | 38 | 20 | 31 | 0 | 3 | 100 | M |
| 17 | 11 | 39 | 29 | 19 | 0 | 2 | 100 | M |
| 18 | 8 | 37 | 15 | 11 | 0 | 29 | 100 | M |
| 19 | 7 | 50 | 12 | 21 | 0 | 10 | 100 | M |
| 20 | 6 | 28 | 19 | 32 | 0 | 15 | 100 | I |
| 21 | 9 | 14 | 23 | 32 | 0 | 22 | 100 | I |
| 22 | 4 | 19 | 48 | 20 | 0 | 9 | 100 | O |
| 23 | 13 | 21 | 24 | 28 | 0 | 9 | 100 | I |
| 24 | 4 | 55 | 20 | 17 | 0 | 4 | 100 | M |
| 25 | 3 | 53 | 26 | 13 | 0 | 5 | 100 | M |

### Positioning Attributes
Positioning Attributes in a diagram. To position attributes in a diagram, first the answers in the Tabulation of Survey are calculated using the Extent Of Satisfaction (better) and Extent Of Dissatisfaction (worse) formulas.

Below is a complete Extent Of Satisfaction and Extent Of Dissatisfaction calculation table for the 25 question attributes covering the 3 components that are examined, namely price, product quality and promotion.

**Table 3.** Calculation table for Extent Of Satisfaction and Extent Of Dissatisfication

| ATRIBUT | A | M | O | I | Q | R | SI(BETTER) | DI(WORSE) |
|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 49 | 4 | 20 | 0 | 11 | 0.25 | -0,66 |
| 2 | 5 | 13 | 48 | 22 | 0 | 12 | 0,68 | -0,78 |
| 3 | 5 | 54 | 15 | 25 | 0 | 1 | 0,26 | -0,92 |
| 4 | 23 | 25 | 5 | 13 | 0 | 34 | 0,32 | -0,34 |
| 5 | 7 | 28 | 33 | 30 | 0 | 2 | 0,57 | -0,87 |
| 6 | 6 | 26 | 16 | 25 | 0 | 27 | 0,29 | -0,56 |
| 7 | 11 | 38 | 18 | 19 | 0 | 14 | 0,36 | -0,69 |
| 8 | 7 | 36 | 19 | 21 | 0 | 17 | 0,32 | -0,70 |
| 9 | 7 | 36 | 11 | 27 | 0 | 19 | 0,25 | -0,64 |
| 10 | 9 | 37 | 12 | 24 | 0 | 18 | 0,28 | -0,64 |
| 11 | 8 | 27 | 16 | 29 | 0 | 20 | 0,34 | -0,60 |
| 12 | 10 | 29 | 17 | 27 | 0 | 17 | 0,37 | -0,63 |
| 13 | 12 | 38 | 16 | 25 | 0 | 9 | 0,37 | -0,72 |
| 14 | 10 | 29 | 26 | 22 | 0 | 13 | 0,46 | -0,70 |
| 15 | 7 | 22 | 30 | 38 | 0 | 3 | 0,60 | -0,84 |
| 16 | 8 | 38 | 20 | 31 | 0 | 3 | 0,40 | -0,84 |
| 17 | 11 | 39 | 29 | 19 | 0 | 2 | 0,49 | -0,84 |
| 18 | 8 | 37 | 15 | 11 | 0 | 29 | 0,26 | -0,58 |
| 19 | 7 | 50 | 12 | 21 | 0 | 10 | 0,24 | -0,78 |
| 20 | 6 | 28 | 19 | 32 | 0 | 15 | 0,37 | -0,69 |
| 21 | 9 | 14 | 23 | 32 | 0 | 22 | 0,47 | -0,54 |
| 22 | 4 | 19 | 48 | 20 | 0 | 9 | 0,65 | -0,83 |
| 23 | 13 | 21 | 24 | 28 | 0 | 9 | 0,55 | -0,67 |
| 24 | 4 | 55 | 20 | 17 | 0 | 4 | 0,29 | -0,90 |
| 25 | 3 | 53 | 26 | 13 | 0 | 5 | 0,33 | -0,90 |

From the calculation results of the Extent Of Satisfaction and Extent Of Dissatisfication tables, the highest better (increase) value is attribute 2 "SP products are easy to use" with a value of 0.68. Meanwhile, the highest worse (decrease) value was attribute 3 "SP product completeness", with a value of -0.92.

Based on the calculation results of the Extent Of Satisfaction and Extent Of Dissatisfication values for attributes 1 to attribute 25, the next step is to position the calculation results in the Kano Model diagram image, below.
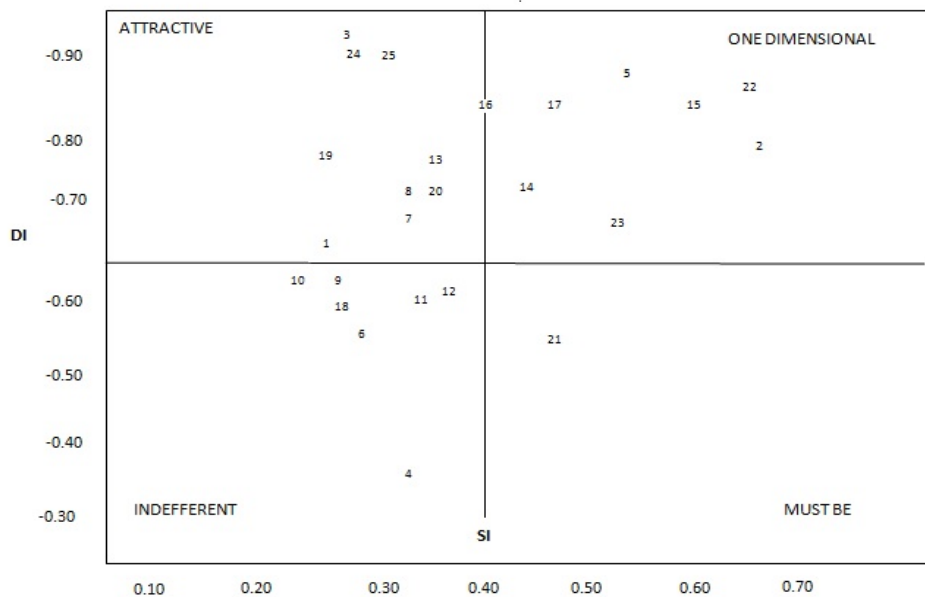


**Figure 1.** Extent Of Satisfaction and Extent Of Dissatisfaction values

**Root Cause Analysis Method**

The next step is to create a Fishbone diagram which is based on the problems often faced by customers which the researchers took from direct interviews with PT XYZ.

## CONCLUSION AND SUGGESTION
### Conclusion

Based on the research results, the conclusion that can be drawn from the total calculation of the Kano method is that SP product customers who fall into the attractive category are 40%, must be 4%, indifferent 28%, one dimensional 28%. For the overall level of satisfaction, it was found that the satisfaction felt with the services provided was at an attractive and one-dimensional, indifferent level.

The calculation results show that the highest better (increase) value is attribute 2 "SP products are easy to use" which is 0.68. Meanwhile, the highest worse (decrease) value was attribute 3 "SP product completeness", with a value of -0.92. The strategy that can be implemented to increase customer satisfaction is by improving the performance of the attributes:

1. Attribute 2, increased ease of using SP products
2. Attribute 5, increased ease of accessing the internet
3. Attribute 14, Increased commitment to maintaining product quality
4. Attribute 15, Improvement in understanding the rules and formulations of SP products
5. Attribute 17, Improved good communication with Customers
6. Attribute 22, Increased Promotion through print media to attract attention

Customer
7. Attribute 23, increase Promotion through organizing media to attract the attention of Potential Customers

Based on the Kano method of data processing, the problems that cause a decrease in customer satisfaction can be implemented into a root cause analysis which consists of 4 categories of product, price, promotion, people (employees & customers), several things that must be corrected to overcome the problems that arise. There are SP product service quality, SP product quality, SP product promotion, customer satisfaction related to product guarantees and customer expectations for SP products, the quality of PT XYZ's relationship with customers.

### Suggestion

From the analysis carried out on this research, there are several things that must be considered, namely the results of calculations using the Kano method and the Kano questionnaire answers obtained from respondents. If the respondent's questionnaire answers are invalid it will affect the clarification of data based on the Kano evaluation table and will also affect calculation process, the accuracy of the calculation must be ensured because if there are errors in the calculation process it will cause the final results obtained to be invalid and will affect the root cause analysis method. Therefore, accuracy is needed in the analysis and calculation process.

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