

Research Article

Increasing Customer Satisfaction Using Integration of Service Quality, Kano and Quality Function Deployment

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Abstract.

An initial survey conducted through interviews with several students and parents found dissatisfaction with school services. This is supported by data on customer dissatisfaction complaints, and there was no effort from the school to fix it; no previous research has focused on this. The purpose of this study was to determine the efforts that can be made to improve the quality of service. The population in this study were grade 12 students. The sampling technique used a questionnaire, while the analysis used was the integration of the Servqual, Kano, and Quality Function Deployment (QFD) methods. The results of the study using the Servqual method obtained 25 service attributes with negative results. While the Kano method obtained 22 important category attributes. Based on the results of the integration of Kano's service quality method into the QFD method, it was found that 3 attributes became priorities for improvement, namely implementing 5S, holding teacher and employee polls, and adding practical tools. The improvement solution for the Brantas Vocational School is implementing 5S management, conducting regular employee performance assessments by holding polls and adding practical equipment in the department.

Keywords: customer satisfaction, servqual, kano, QFD

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1. Introduction

Brantas Vocational School is a vocational education institution whose profession is to educate and train human resources so that after graduation they have the qualities required by the world in general or the world of work and industry in particular. to be able to compete with other schools or educational institutions, quality standards must be maintained and improved [1]. Service quality is a major factor in increasing value, satisfaction, and reputation which ultimately affects loyalty [2]. Educational institutions are required to be able to provide quality educational services to the wishes of customers [3]. The situation of ups and downs in the number of students and the results of the initial survey through interviews with several students and parents of students, it was found

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that there was dissatisfaction with school services so there were differences between ideal and actual conditions that were far away, lack of adequate practice facilities, there were complaints about poor services. still unsatisfactory. This is supported by the complaint data from customers in table 2 and from the school, there has also been no attempt to fix it, and there is also no previous research that has focused here so this research is very important to do, for the survival of the school so that this educational institution can still exist amid a lot of competition between schools.

One of the obstacles that must be overcome by educational institutions is how to manage a quality and quality educational institution, where currently there are many efforts by administrators or managers of educational institutions to improve the quality and quality of their education. the formulation of the problem as follows:

1. Knowing whether students or customers are satisfied with the results of the GAP assessment obtained from Servqual calculations?
2. What characteristics are included in the important category in Kano?
3. How is the Quality Function Deployment (QFD) method used to improve service quality at SMK Brantas Karangates?

There are five dimensions of quality, namely direct evidence (tangible), empathy (empathy), reliability (reliability), assurance (assurance), and responsiveness (responsiveness) [4]. Tangible are all aspects that are physically visible, empathy is the ability of employees to care and pay attention to each of their customers by trying to meet their needs, reliability is the ability to have reliable performance or performance, assurance is the ability of employees to provide trust and security to customers, Responsiveness is the ability to respond to customer needs and desires and provide fast service [5]. This research is research that uses the approach of Service Quality (SERVQUAL), Kano, and QFD to determine the performance of service quality at SMK Brantas Karangates, Malang Regency, East Java. Reviewing previous research, to make quality improvements can use the Six Sigma method, Kano [6], study conducted an analysis of customer satisfaction on product characteristics. Likewise with product development research using the QFD method [7]. The previous studies were not carried out simultaneously, but in this study, they were carried out by combining the Servqual, Kano, and QFD methods. Although there are also studies that use the same method, namely the integration of the Servqual, Kano, and QFD methods [8], there have been no previous researchers who have examined the analysis of customer satisfaction with the Service Quality (SERVQUAL), Kano and QFD approaches to improve service quality in Indonesia. SMK Brantas Karangates Malang Regency.

The purpose of this study, researchers want to know the level of customer satisfaction through the servqual method and then find out the category of service attributes according to customer desires using the Kano method and provide suggestions and solutions to improve and improve the quality of education services by customer expectations and needs with the QFD method [9].

2. Methodology

This type of research is problem-solving research, problem solving is a mental and intellectual process in finding problems. Then solve problems based on accurate data and information, to be able to conclude carefully and quickly. The research was conducted by looking at the events that occurred. It is used to provide an objective evaluation as well as evaluation material for school management to make decisions about what happened. Researchers want to analyze customer satisfaction on school performance to optimize service.

2.1. Data collection

Data collection in this study used several techniques, including:

2.1.1. Interview

Collecting data by asking questions directly to respondents. In this case obtained through interviews with the principal, teachers, employees, and students in order to obtain information [10].

2.1.2. Survey

Conducted to collect primary data by asking questions to respondents individually.

2.1.3. Questionnaire

In this study, the primary data collection method was carried out using a closed Questionnaire method.

2.2. Data processing

2.2.1. Service quality (servqual)

To find out the value of GAP Servqual by reducing the average consumer perception with the average value of consumer expectations [11].

2.2.2. Kano

The steps taken in processing the Kano model method are (1) Classifying functional and dysfunctional questions to process the Kano model. (2) The answers obtained from the respondents were classified for each question and then tabulated into the Kano Model evaluation table category. (3) Determination of Kano category for each attribute is done by using Blauth Formula [12].

2.2.3. Quality Function Deployment (QFD)

QFD is a method that can be used to make improvements. The QFD method begins with compiling a House Of Quality (HOQ) matrix. The steps for compiling the integration of the Servqual and Kano Model into QFD (Quality Function Deployment) include: (1) Calculating the Servqual GAP Score. (2) Grouping the Kano Model categories. (3) Integration of Servqual and Kano Model, namely attributes that fall into the Attractive, dimensional, Must be a category of the Kano Model will be included in the Customer requirements (HOQ) matrix. (4) Integration of Servqual, Kano Model into QFD (HOQ). Calculating Planning matrix, Technical Requirements, Inter-Relationships, Roof/Technical Correlation, and Priorities.

3. Result and Discussion

3.1. Data processing Servqual

From the results of the questionnaire data that has been distributed to students of SMK Brantas Karangates, it can be seen the level of perception, level of expectation, level of importance, and Gap of the five dimensions of *Servqual*. The gap value is obtained through a comparison between perception data and expectation data. data processing *Servqual* in the education services of SMK Brantas Karangates can be seen in Table 1 below:

TABLE 1: Ranking of 5 Big gaps of service attributes.

No	Dimensions	Dimensional Service Attributes	Gap
1	Tangibles	School toilets are always clean	-1,19
2	Empathy	School management, teachers provide visits to students who are affected by the disaster.	-1,18
3	Reliability	There is never an empty hour in each lesson	-1,10
4	Reliability	Teachers have learning tools/media, teaching according to their educational background.	-0,99
5	Tangibles	Practice equipment is complete and adequate.	-0,96

Based on Table 1, it is known that the highest gap in educational services at SMK Brantas is that school toilets are always clean. This can be an input for related parties to hear the *voice of customers* to strive so that school toilets are always clean and the addition of toilet facilities at SMK Brantas Karangkates.

3.2. Data processing kano model

Grouping and Determining *Kano* of each attribute The results of the evaluation in the canoe table are then grouped and determined the attributes into the *canoe model* using the *Blauth Formula*, namely adding up each category, if $(M.+O.+A) > (R.+I.+Q)$ then the selected category is the maximum of $(M.+O.+A)$, and if $(M.+O.+A) < (R.+I.+Q)$ then the selected category is the maximum of $(R.+I.+Q)$. Kano Model is used as a service attribute classification. The service attribute classification is divided into 3 categories, namely Attractive. (A), One. Dimensional (O), and Must. Be (M). From the results of the Kano Model data processing, it can be seen what service attributes are included In the important categories of the Kano Model method. Find more details about the Kano Model category, it can be Seen in Table 2, namely:

Based on Table 2, 10 service attributes fall into the Must Be (M) category, which means that the SMK Brantas Karangkates school must immediately fulfill these service attributes. Because this service attribute is a core attribute so it should be there. The consequences of these service attributes are not met then consumers will feel disappointed. As for the One Dimensional (O) category, there are 13 service attributes. This means that the categories in this service attribute are linear, if the service. Attribute. is high, the students will be satisfied. and vice versa. for the Attractive category (A) there are 0 service attributes.

TABLE 2: Category Kano model.

No.	Service Attributes	Kano Model Category
1	Teachers and employees are well-groomed and polite	O
2	Classrooms are comfortable, clean, and adequate	O
3	School toilets are always clean	M
4	Complete practice equipment and adequate	M
5	Schools provide facilities for worship (places of worship).	M
6	Teachers always come on time.	M
7	Teachers have learning tools/media, teaching according to their educational background.	M
8	There is never any free time in each lesson	M
9	Teachers have competence according to their educational background.	M
10	implementation of learning according to schedule and carried out with discipline.	O
11	Smiles, greetings, and greetings are always given by administrative officers when serving students.	O
12	Honesty is owned by every administrative officer.	O
13	Administrative services in the administrative office are fast and precise.	O
14	Teachers and employees are responsive to student complaints.	O
15	Service for sick students at school is fast and responsive.	O
16	School regulations apply to all students.	M
17	Guaranteed school environment safety that makes students comfortable.	O
18	After graduating, students are guaranteed to enter the company or workplace	O
19	All teachers assist students in finding Work.	O
20	Established good relationships and communication between students, teachers, and employees	O
21	Teachers serve wholeheartedly.	I
22	Teachers always motivate students to learn.	O
23	Teachers and employees provide good examples and role models.	M
24	School management, The teacher pays a visit to the students who are affected by the disaster	M
25	Security during the teaching and learning process is guaranteed.	I

(Source: SPSS data processing)

3.3. House of Quality (HOQ)

Customer Requirements

From Table 3, of the 25 attribute services, there are 22 attribute services are selected to be customer needs. Based on the Gap value greater than -0.25 and the Kano Model

TABLE 3: Customer Requirements for education services.

No.	Attributes of service Gap	Gap	KANO	Description
1	Teachers and employees are well-groomed and polite	-0,41	O	Chosen
2	Classrooms are comfortable, clean, and adequate	-0,47	O	Chosen
3	School toilets are always clean	-1,19	M	Chosen
4	Complete practice equipment and adequate	-0,96	M	Chosen
5	5Schools provide facilities for worship (places of worship).	-0,76	M	Chosen
6	Teachers always come on time.	-0,38	M	Chosen
7	Teachers have learning tools/media and teaching according to their educational background.	-0,99	M	Chosen
8	There is never any free time in each lesson	-1,10	M	Chosen
9	Teachers have competence according to their educational background.	-0,87	M	Chosen
10	implementation of learning according to schedule and carried out with discipline.	-0,42	O	Chosen
11	Smiles, greetings, and greetings are always given by administrative officers when serving students.	-0,48	O	Chosen
12	Honesty is owned by every administrative officer.	-0,46	O	Chosen
13	Administrative services in the administrative office are fast and precise.	-0,38	O	Chosen
14	Teachers and employees are responsive to student complaints.	-0,63	O	Chosen
15	Service for sick students at school is fast and responsive.	-0,62	O	Chosen
16	School regulations apply to all students.	-0,43	M	Chosen
17	Guaranteed school environment safety that makes students comfortable.	-0,35	O	Chosen
18	After graduating, students are guaranteed to enter the company or workplace	-0,23	O	Not selected
19	All teachers assist students in finding Work.	-0,47	O	Chosen
20	Established good relationships and communication between students, teachers, and employees	-0,28	O	Chosen
21	Teachers serve wholeheartedly.	-0,85	I	Not selected
22	Teachers always motivate students to learn.	-0,38	O	Chosen
23	Teachers and employees provide good examples and role models.	-0,46	M	Chosen
24	School management, The teacher pays a visit to the students who are affected by the disaster	-1,18	M	Chosen
25	Security during the teaching and learning process is guaranteed.	-0,94	I	Not selected

category, namely the attractive, one-dimensional, and must-be categories. Meanwhile, the Gap value is smaller than -0.25 and the category that is included as indifferent as many as 2 service attributes is not chosen because it cannot be used as a reference for service improvement or because this category is considered not to care about service improvement (neutral).

4. Conclusion

Based on research that has been done using the Servqual, Kano, and QFD methods. The service quality method which is divided into 5 dimensions of service attributes from 25 service attributes shows negative results. While the Kano method obtained 22 important category attributes. Based on the results of the integration of the service quality method, and Kano into the QFD method, there are 13 technical requirements that will be used for priority improvements at SMK Brantas Karangates. Of the 13 attributes, there were 3 attributes that became priorities for improvement, namely applying 5S (smile, greeting, greeting and being polite and courteous), holding teacher and employee polls, and adding practice tools according to developments. The suggested improvement solution for the Brantas Vocational School is to implement 5S management in each department, conduct regular employee performance assessments by holding polls, and add and always upgrade practice equipment in each department according to the times. This solution was chosen because it has a high importance of how value.

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