IMPLEMENTATION OF CUSTOMER RELATIONSHIP MANAGEMENT (CRM) TO ANALYZE SERVICE QUALITY IMPROVEMENT ON BALAI KESEHATAN OLAHRAGA MASYARAKAT BANDUNG

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ABSTRACT

Balai Kesehatan Masyarakat (BKOM) Bandung is the Technical Implementation Unit (UPT) of the Ministry of Health of the Republic of Indonesia which organizes the health efforts of strata two to solve public health problems in the field of sports health as a whole and integrated. BKOM Bandung currently has a customer satisfaction survey, but the survey that has been running does not have an assessment indicator because it only produces information on the number of customers who are satisfied and not satisfied with the service in BKOM Bandung. So it can not know what service indicator that has not satisfied customers to the services provided.

From these problems raised the idea to implement Customer Relationship Management information system, which in it can help the community complaints team in assessing the indicators of service quality and recommend the proposed service improvement at BKOM Bandung. Assessment of service quality is calculated using Fuzzy Service Quality (Servqual) method.

After going through the testing phase, this information system can solve the problems that occur. BKOM Bandung can know customer ratings on each indicator of service quality and provide recommendation service improvement on BKOM Bandung by using Fuzzy Service Quality (Servqual) method.

Key word : *Customer Relationship Management, Service Quality,* Kualitas Pelayanan, Kepuasan Pelanggan

1. INTRODUCTION

Balai Kesehatan Masyarakat (BKOM) Bandung is the Technical Implementation Unit (UPT) of the Ministry of Health of the Republic of Indonesia which organizes health strata two health efforts to solve public health problems in the field of sports health in an integrated and integrated. There are four groups of services in BKOM Bandung that is promotive or preventive, curative, rehabilitative, and physical exercise. Promotional or preventive services are more intensive services such as health and sports socialization, nutrition consultation, sports health counseling, fitness checks, and exercise or exercise programs. Curative service is a service given to customers who suffered sports injuries. Rehabilitative service is a post-sick exercise program. While exercise training is a service provided to spur physical fitness such as fitness exercises, badminton, basketball, yoga, and gymnastics.

BKOM Bandung has a team of Complaints Society formed directly by the Head of BKOM Bandung to maintain and improve the quality of service. The Complaints Team has the duty to manage customer feedback and criticism and conduct customer satisfaction surveys. Customers can complete a customer satisfaction survey by inserting a customer satisfaction coin into a satisfied box if the customer is satisfied with the service received or the customer can insert a coin into the box unsatisfied when the customer is dissatisfied with the service received. Every month the customer satisfaction survey box will be opened and counted. Based on the data of client satisfaction BKOM Bandung on Floor I and Floor II Year 2016, can be seen that the level of customer satisfaction is good. The best achievement is in November as much as 100% of 561 respondents and in December as much as 100% of the 488 respondents who expressed satisfaction with the service in BKOM Bandung. While the smallest in March as much as 86% of the 240 respondents who expressed satisfaction on service in BKOM Bandung. But the BKOM Bandung is difficult to determine the proposed service improvement. Because the ongoing customer satisfaction survey does not have an assessment indicator. So it can not know what service indicators have not satisfied the customer for the services that have been given.

Meanwhile, service improvements are now made based on criticism and suggestions. Every month a meeting is held to process the criticism and suggestions obtained, then the results of the meeting will be used as a report and the public complaints team to send a letter to each section related to criticism and suggestions submitted by the customer for further follow up by each section. Based on the

results of the Complaint Recapitulation in January - December 2016 for all types of services, 15.91% of 44 respondents gave suggestions for bathrooms to be provided with hot water, while 33.33% of the 9 respondents gave criticism about where the treadmill was glare.

Meanwhile, based on the Decree of Minister of Administrative Reform No.63 / KEP / M.PAN / 7/2003 on General Guidelines of Public Service Implementation states that the measure of the success of service delivery is determined by the level of satisfaction of service recipients. Satisfaction of the service recipient is achieved if the service recipient receives the service as required and expected. Therefore, to know the level of satisfaction of service recipients needed a quality service survey which one of them can be done by spreading the questionnaire.

In addition, CRM is a core business strategy that integrates internal processes and functions with all external networks to create and realize value for the target customers on a profitable basis. CRM is supported by quality consumer data and information technology [1]. Therefore, BKOM Bandung needs an information system that can help the public complaints team to assess the quality of service with Customer Relationship Management (CRM) approach.

The objective of this research is to help the community complaints team in assessing the indicators of service quality and recommend the proposed service improvement at BKOM Bandung.

2. CONTENT OF RESEARCH

2.1 Information System

The information system is a system within an organization that meets the needs of daily transaction processing, supports operations, is managerial and strategic activities of an organization and provides certain outside parties with the necessary reports "[2].

2.2 *Customer Relationship Management*

CRM is a core business strategy that integrates internal processes and functions with all external networks to create and realize value for the target customers on a profitable basis. CRM is supported by quality consumer data and information technology [1].

2.3 *Strategic Framework CRM*

Strategic Framework for CRM is a framework that analyzes strategy formulation, value creation, information management, multi-channel integration, and performance research and comprises strategy development process, value creation process, multi-channel integration process, and information management process in Stages. The concept of the strategic framework can be seen in Figure 1 below.

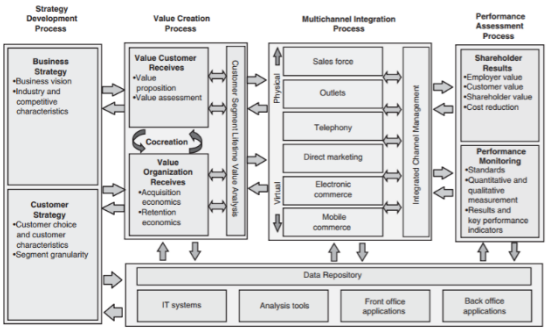


Figure 1. *Strategic Framework CRM*

From the framework of the CRM strategic framework there are several phases, among others [3]:

1. Strategy Develoment Process
   In this process requires a double focus on the organization's business strategy and customer strategy. How well the two are interconnected fundamentally influence the success of the CRM strategy. The strategy development section is divided into two elements: business strategy and customer strategy. First, the business strategy must be considered in advance to determine how customer strategies can be developed and evolved at any time. The business strategy can be started by reviewing or linking the vision of the company. Furthermore, a review of industrial competition. In short, the strategy development process involves a detailed assessment of business strategy and the development of appropriate customer strategies.

2. Value Creation Process
   The value creation process takes the output of the development strategy process and turns it into a program in which both produce and deliver value. The area is divided into three key elements, namely (1) determining the value of the company acceptable to the customer; (2) determine what value a company can receive from customers; And (3) successfully managing this value exchange, which involves co-creation or joint production, maximizing the desired lifetime value of the customer segment.

3. Multichannel Integration Process
   Multi-channel integration can be considered one of the most important processes in CRM because at this stage the output of business strategy and value creation process is translated into activities that can add value to the company with customers. Multi Chanel integration focuses on making decisions about which channel combinations are most appropriate to use

   There are several channel options that can be used, where the chanel option option is divided into six categories widely based on physical

contact or virtually. The first is the sales force, like the field manager, and the waiter. The two are otlet, such as branch offices, stores, depots, and kiosks. Third telephony, like traditional telfon, facsimile, telex and call center contact. Fourth is dirrect marketing, such as dirrect mail, radio, traditional television (but not including e commerce). The fifth is E-commerce, such as e-mail, internet, and interactive digital television. Sixth is m-commerce, such as mobile phone, short message, wireless alpication protocol, and 3G mobile service.

4. Performance Assessment Process
   The performance appraisal process involves an important task to ensure that the organization's strategy leads to the requirements of CRM to provide the right standards and as a basis for future improvements. This process can be seen based on two main components namely shareholder output and performance monitoring. The result of shareholders is the result of the application of CRM technology so that it is useful for the company to reduce operational costs and job efficiency. Performance monitoring is to ensure that CRM activities are planned and practiced effectively and reciprocally still exist to maximize performance improvements and as learning for the organization.

5. Information Management Process
   The information management process is concerned with gathering, examining, and using data along with information from all customer contact points to generate customer knowledge and appropriate marketing responses. The main ingredient for the management of such information is the Data Repository, which provides data storage on the Customer; IT systems, which include computer hardware, software, and middleware owned by the organization; Tool analysis; And front office and back office applications, which support many activities involving direct contact with customers and manage internal operations, administration and supplier relationships.

2.4 *Service Quality Methode*

Servqual is an instrumental way of measuring the quality of services developed by Parasuraman, Zeithaml and Berry in their series of studies on services sectors, this model also known as Gap. This model is closely related to the satisfaction model [4].

Service quality measurement in Servqual model is based on multi item scales designed to measure customer expectations and perceptions. As well as the Gap between the two on the five dimensions of service quality (Reliabitity, responsiveness, assurance, Empathy and Physical Evidence), the five dimensions of quality are spelled out in some questions for attribute expectations and perception variables based on likert scale.

There are 5 major dimensions in assessing service quality [5] :

1. **Tangibles**
   With regard to the attractiveness of physical facilities, equipment and materials used by the company, as well as the appearance of employees.
2. **Reliability**
   It deals with the company's ability to provide accurate service from the first time without making any mistakes and delivering its services within the agreed time.
3. **Responsiveness**
   With regard to employees' willingness and ability to assist customers and respond to their requests, as well as to inform when services will be provided and then provide services quickly.
4. **Assurance**
   Namely the behavior of employees is able to grow customer confidence in companies and companies can create a sense of security for customers. The guarantee also means that employees are always polite and have the necessary knowledge and skills to handle any customer questions or concerns.
5. **Emphaty**
   It means that the company understands the problems of its customers and acts in the interests of its customers, and gives personal attention to its customers and has a comfortable operating hours.

Service quality gap (gap) consists of five major gaps :

1. Gap 1, gap between customer expectations and management perception (knowledge gap). This gap means that management perceives customer expectations of service quality inaccurately.
2. Gap 2, a gap between management's perceptions of consumer expectations and service gap specifications (standards gap). This gap indicates that service quality specifications are inconsistent with management's perception of quality expectations. The reasons for this are the lack of clear performance standards, inadequate planning or planning procedures, poor planning management, lack of clear goal setting within the organization, lack of support and top management commitment to service quality planning, lack of resources, and demand situation Excessive.
3. Gap 3, a gap between service quality specifications and delivery of services (delivery gap). This gap means that quality specifications are not met by performance in the production process and service delivery.
4. Gap 4, gap between service delivery and external communications (communications gap). This gap means that the promises delivered by the service

provider are inconsistent with the services delivered to the customers.

5. Gap 5, the gap between the perceived service and the expected service (service gap). This gap means that perceived services are inconsistent with expected services. This gap can have negative consequences.

   Servqual scores for each pair of questions for each customer can be calculated based on the following formula.

   Q = P – E (1)

   Where:

   Q = SERVQUAL score

   E = Expectation Score or customer expectation on service quality.

   P = Perception score of the actual service is accepted.

2.5 Questionnaire

According to Larry Cristensen (2004) Questionnaire is an instrument for data collection, in which participants or respondents fill in questions or statements provided by researchers. Researchers can use questionnaires to obtain data related to the thoughts, feelings, attitudes, beliefs, values, perceptions, personality and behavior of the respondents. In other words, the researchers were able to perform measurements of various characteristics using a questionnaire [6].

2.6 Skala Likert

Likert scale is used to measure attitudes, opinions, and perceptions of a person or group of people about social phenomena. In research, this social phenomenon has been specified specifically by the researchers, hereinafter referred to as research variables.

With Likert scale, the variable to be measured is translated into indicator variable. Then the indicator is used as a starting point to arrange the items of the instrument that can be a statement or question.

The answer of each instrument item using Likert scale has gradation from very positive to very negative.

For the purposes of quantitative analysis, answers can be scored, for example:

1. Agree / always / very positive given a score of 5
2. Agreed / often / positively given a score of 4
3. Hesitant / occasional / neutral given a score of 3
4. Hesitant / sometimes / neutral given score 34. Disagree / almost never / negative given score 2
5. Strongly disagree / never / scored 1

Research instruments using Likert scale can be made in the form of checklist or multiple choice [6].

2.7 *Fuzzy-Servqual*

Fuzzy Concept - servqual is a measurement theory that accommodates linguistic language with numerical language (numbers / statistics). The uncritical factor has been accommodated in an assessment of linguistic variables adapting to data uncertainty, ambiguity and subjectiveity, which can not be done with the usual servqual model.

Calculation of fuzzyfication value of questionnaire data is done by the following formula [7]:

Lower limit :

$$(c)= \frac{b_{i1}*n_1+b_{i1}*n_2+b_{i2}*n_3+\ldots\ldots+b_{i(k-1)}*n_k}{n_1+n_2+n_3+\ldots\ldots+n_k} \quad (2)$$

Middle value :

$$(a) = \frac{b_{i1}*n_1+b_{i2}*n_2+b_{i3}*n_3+\ldots\ldots+b_{ik}*n_k}{n_1+n_2+n_3+\ldots\ldots+n_k} \quad (3)$$

Upper limit:

$$(b) = \frac{b_{i2}*n_1+b_{i3}*n_2+\ldots\ldots+b_{i(k-1)}*n_k+b_{ik}*n_k}{n_1+n_2+n_3+\ldots\ldots+n_{(k-1)}+n_{jk}} \quad (4)$$

Information :

bi = The average value of fuzzy sets per level of importance

n = Number of respondents per level of importance.

After each criterion is obtained the difference, then in the next stage is to defuzzyfikasi to obtain a single representative value by using Arithmatic Mean formulated as follows [7] :

$$\mu\,(a \cap b) = \frac{a+b}{2} \quad (5)$$

Information :

a = Middle value calculation results on fuzzification

b = Result of upper limit calculation on fuzzification

2.8 Problem Analysis

Problem analysis is an assumption of the problem that will be described in the data processing procedures on the system to be built. Based on the research conducted there are problems on customer satisfaction surveys that are running in BKOM Bandung does not have an assessment indicator. So that the BKOM Bandung can not know what service indicators that have not satisfied customers of services that have been given.

2.9 Framework CRM Analysis

To set the CRM feature appropriately, a framework is required as a reference. The framework is a framework for presenting the phases and maturity of corporate relationships with its customers. The CRM framework used in the system to be built is using Strategic Framework CRM which can be seen in Figure 2.

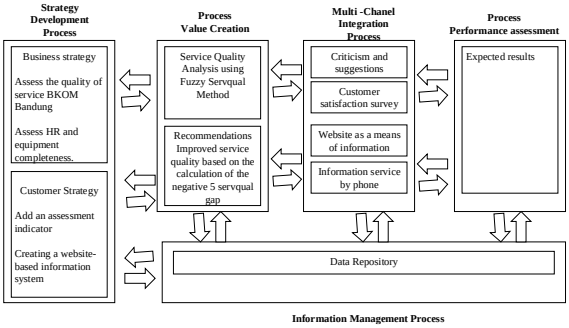


Figure 2. Implementation of Strategic Framework CRM on BKOM Bandung

Application of Strategic Framework CRM in BKOM Bandung consists of 5 main process of interrelated work, inter-linking process shown by two-way arrow.

The application of strategic framework CRM in BKOM Bandung which is divided into 5 main process as follows:

2.9.1 Strategy Development Process

In this process analyzed the development of strategy, in this process there are two main focuses of business strategy and customer strategy.

1. Business Strategy
   Here is a table that explains the analysis of business strategy BKOM Bandung associated with improving service quality can be seen in table 1.

Table 1. Business Strategy Analysis

The current business strategy	Analysis	Business strategy proposed
BKOM Bandung Has a Vision that is "Improving the quality of human life of Indonesia"	In terms of improving service quality BKOM Bandung vision is supported by a mission that one of them is to apply Quality Assurance to customer satisfaction.	Strategies undertaken to improve the quality of service is to conduct an assessment of the quality of services in BKOM Bandung.
BKOM Bandung highly upholds the rules of organizing a good sport, true, orderly and measurable.	For the implementation of good sports services, true, regular, and measurable BKOM Bandung has had human resources and equipment completeness that can support sports health services.	Conduct assessment from the customer side about human resources and completeness of equipment in BKOM Bandung

2. Customer Strategy
   While customer strategy in BKOM Bandung done by applying Quality Assurance. The analysis of customer strategies that are currently running in BKOM Bandung can be seen in table 2.

Table 2. Customer Strategy Analysis

Current Customer Strategy	Analysis	The proposed strategy
BKOM Bandung already has a customer satisfaction survey. Customers can fill the survey by inserting a coin into a satisfied or unsatisfied box.	Although according to customer satisfaction survey results have been good, but the information obtained can not be analyzed further because only the information on the number of customers who feel satisfied and not satisfied.	Conducting a quality service survey using questionnaires.
BKOM Bandung already has a box of points and suggestions where customers can express aspirations in the form of criticism and suggestions related to services that have been received in BKOM Bandung in order to be processed and responded.	Critics and suggestions that are currently running still use handwriting so there is a possibility of writing is not clear. Need paper so inefficient	Creating a website-based information system for filling out surveys and submitting criticisms and suggestions.

2.9.2 Value Creation Process

Furthermore, in the process of formation of value carried out the implementation of the results of the strategy development process.

1. Quality of Service Analysis
   Analysis of service quality is an analysis performed to assess the quality of services in BKOM Bandung. In this study, the analysis of service quality is done through the following stages:

a. A. Identification of Service Quality Attributes and Respondent's Characteristics

Table 3. Identification of service element of BKOM Bandung with Servqual dimension

Servqual Dimensions	Var	Quality of Service Indicators
Tangibles	V1	The service unit has modern equipment
	V2	Completeness of service support facilities
Reliability	V3	Conformity of services gained with the promised
	V4	Compatibility of service time with the promised
Responsiveness	V5	Immediate or fast service
	V6	The willingness of the officer to assist the customer
Assurance	V7	Serve customers with courtesy and friendliness
	V8	Ability to cultivate trust in customers
	V9	Ability and knowledge of officers in serving
Emphaty	V10	Convenient operating times for customers
	V11	Give full attention to customers personally

While identification of respondent characteristic is done to know the type of respondent according to research characteristic. Respondents in this study are customers who have received physical exercise and fitness check up in BKOM Bandung.

b. Preparation and distribution of questionnaires

Table 4. Preliminary Physical Exercise questionnaire questionnaire

Var	Statement
V1	This service unit has the latest (modern) equipment.
V2	Supporting facilities for complete physical exercise implementation compared to other places.
V3	Customers always get service in accordance with the promised without any errors.
V4	Customers always receive service in accordance with the agreed time.
V5	Instructors always respond to customer needs quickly.
V6	Instructor's willingness to assist customers in terms of physical exercise.
V7	The instructors always serve the customers with courtesy and friendliness.
V8	Instructors are able to cultivate trust in customers when providing services.
V9	Instructors have good knowledge and skills to support their work.
V10	Physical training services have a convenient operational time for customers.
V11	Instructors always give full personal attention to the customer.

c. Data processing Questionnaire

In the first phase will be determined Fuzzy set. The determination of the Fuzzy set is performed to determine the score to be given for each of the criteria proposed in the questionnaire. The determination of Fuzzy set value in this study can be seen in Figure 3.

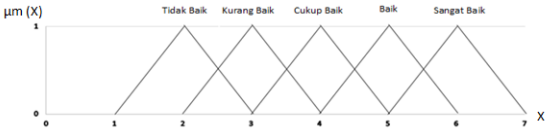


Figure 3. *Fuzzy Set*

Data processing of physical exercise service questionnaire is done to find out how big the gap between consumer expectation with consumer perception. The following is an example of a calculation performed for the service element attribute V1:

1) Menghitung nilai *Fuzzyfikasi*

To calculate the value of Fuzzyfication on the perception and expectation of physical exercise service using the formula (2) to find the upper limit, (3) to find the middle value, and (4) to perceive the lower bound.

Then Perception Values Falsification V1:

Lower limit (c) =

$$= \frac{b_{i1}*n_1+b_{i1}*n_2+b_{i2}*n_3+\ldots\ldots+b_{i(k-1)}*n_k}{n_1+n_2+n_3+\ldots\ldots+n_k}$$

$$= \frac{(1*0) + (2*3) + (3*13) + (4*12) + (5*2)}{0 + 3 + 13 + 12 + 2}$$

$$= \frac{0 + 6 + 39 + 48 + 10}{30} = \frac{103}{30} = 3{,}43$$

Middle value (a) =

$$= \frac{b_{i1}*n_1+b_{i2}*n_2+b_{i3}*n_3+\ldots\ldots+b_{ik}*n_k}{n_1+n_2+n_3+\ldots\ldots+n_k}$$

$$= \frac{(2*0) + (3*3) + (4*13) + (5*12) + (6*2)}{0 + 3 + 13 + 12 + 2}$$

$$= \frac{0 + 9 + 52 + 60 + 12}{30} = \frac{138}{30} = 4{,}43$$

Upper limit (b) =

$$= \frac{b_{i2}*n_1+b_{i3}*n_2+\ldots\ldots+b_{i(k-1)}*n_k+b_{ik}*n_k}{n_1+n_2+n_3+\ldots\ldots+n_{(k-1)}+n_{jk}}$$

$$= \frac{(3*0) + (4*3) + (5*13) + (6*12) + (7*2)}{0 + 3 + 13 + 12 + 2}$$

$$= \frac{0 + 12 + 65 + 72 + 14}{30} = \frac{163}{30} = 5{,}43$$

Calculation of Expectation Fuzzification V1:

Lower limit (c) =

$$= \frac{b_{i1}*n_1 + b_{i1}*n_2 + b_{i2}*n_3 + \ldots\ldots + b_{i(k-1)}*n_k}{n_1 + n_2 + n_3 + \ldots\ldots + n_k}$$

$$= \frac{(1*0) + (2*0) + (3*15) + (4*13) + (5*2)}{0 + 0 + 15 + 13 + 2}$$

$$= \frac{0 + 0 + 45 + 52 + 10}{30} = \frac{107}{30} = 3{,}56$$

Middle value (a) =

$$= \frac{b_{i1}*n_1 + b_{i2}*n_2 + b_{i3}*n_3 + \ldots\ldots + b_{ik}*n_k}{n_1 + n_2 + n_3 + \ldots\ldots + n_k}$$

$$= \frac{(2*0) + (3*0) + (4*15) + (5*13) + (6*2)}{0 + 0 + 15 + 13 + 2}$$

$$= \frac{0 + 0 + 60 + 65 + 12}{30} = \frac{137}{30} = 4{,}56$$

Upper limit (b) =

$$= \frac{b_{i2}*n_1 + b_{i3}*n_2 + \ldots\ldots + b_{i(k-1)}*n_k + b_{ik}*n_k}{n_1 + n_2 + n_3 + \ldots\ldots + n_{(k-1)} + n_{jk}}$$

$$= \frac{(3*0) + (4*0) + (5*15) + (6*13) + (7*2)}{0 + 0 + 15 + 13 + 2}$$

$$= \frac{0 + 0 + 75 + 78 + 14}{30} = \frac{167}{30} = 5{,}56$$

The recapitulation of the result of defuzzification of physical training service that has been calculated can be seen in table 5.

Table 5. Recapitulation of Defuzzification Results of Physical Fitness Service

Var	Perception			Expectations		
	Fuzzification			Fuzzification		
	c	a	b	c	a	b
V1	3,43	4,43	5,43	3,56	4,56	5,56
V2	3,96	4,96	5,96	4,03	5,03	6,03
V3	3,26	4,26	5,26	3,36	4,36	5,36
V4	3,66	4,66	5,66	3,80	4,80	5,80
V5	2,93	3,93	4,93	3,10	4,10	5,10
V6	3,33	4,33	5,33	3,56	4,56	5,56
V7	3,73	4,73	5,73	3,83	4,83	5,83
V8	3,13	4,13	5,13	3,36	4,36	5,36
V9	3,86	4,86	5,86	4,06	5,06	6,06
V10	2,80	3,80	4,80	3,40	4,40	5,40
V11	3,80	4,80	5,80	3,96	4,96	5,96

2) Calculate the Defuzzification value*i*

To calculate the Defuzzyfication value on the perception and expectation of physical exercise service using formula (5) to obtain a single representative value. Here's the calculation on V1:

Perception Defuzzification Calculation V1:

$$\mu(a \cap b) = \frac{a + b}{2} = \frac{4{,}43 + 5{,}43}{2} = 4{,}93$$

Calculation Defuzzyfication Expectation V1:

$$\mu(a \cap b) = \frac{a + b}{2} = \frac{4{,}56 + 5{,}56}{2} = 5{,}06$$

The recapitulation of the result of defuzzification of physical training service that has been calculated can be seen in table 6.

Table 6. Recapitulation of Defuzzification Results of Physical Fitness Service

Var	Perveption Defuzzyfication	Expectation Defuzzyfication
V1	4,93	5,06
V2	5,46	5,33
V3	4,76	4,86
V4	5,16	5,30
V5	4,43	4,60
V6	4,83	5,06
V7	5,23	5,33
V8	4,63	4,86
V9	5,36	5,56
V10	4,30	4,90
V11	5,30	5,46

3) Calculating the gap 5 value (Q)

To calculate the value of Gap 5 on the perception and expectation of physical exercise service using formula (1) to get the gap value between perception and expectation. Here's the calculation on V1.

Q = P – E

Q = 4,93 – 5,06 = - 0,13

The calculation result shows that the value of gap 5 (Q) to attribute V1 at physical training service is -0.13.

Based on all the calculation, we get the gap value of all service indicators on the quality of physical exercise service which can be seen in table 7

Table 7. Calculation of gap value 5 on physical exercise services

Var	Perception	Expectation	GAP
	Defuzzyfication	Defuzzyfication	
V1	4,93	5,06	-0,13
V2	5,46	5,33	-0,07

V3	4,76	4,86	-0,10
V4	5,16	5,30	-0,13
V5	4,43	4,60	-0,17
V6	4,83	5,06	-0,23
V7	5,23	5,33	-0,10
V8	4,63	4,86	-0,23
V9	5,36	5,56	-0,20
V10	4,30	4,90	-0,60
V11	5,30	5,46	-0,17

From the result of processing the calculation of servqual value (gap) obtained by service element having the smallest value, that is service element V10 with value -0,60. Furthermore, the element of service that has the smallest value will be recommended to improve the quality of service.

2. Recommendation for Service Improvement

The recommendation of service quality improvement will be prepared based on the result of preparing the preliminary questionnaire.

The preparation of recommendations to improve the quality of physical exercise service services that have been prepared can be seen in table 8

Table 8. Recommendations for Improving the Quality of Physical Exercise Services

Var	Recommendations Improvement
V1	Regeneration of physical exercise equipment with newer tools (modern)
V2	It is necessary to procure new physical training support facilities not yet owned by BKOM Bandung
V3	It is necessary to evaluate the service procedures in order to avoid errors in providing services to customers.
V4	It is necessary to evaluate the service procedure so that service time is not too late.
V5	Instructor training needs to be done in order to respond to customer needs quickly and accurately.
V6	Instructions should be directed to assist the customer during the service.
V7	It should be given a reprimand against the instructor to serve the customer with courtesy and friendliness.
V8	It is necessary to train and instruct instructors in order to be able to cultivate a sense of trust to customers.
V9	An evaluation of instructor performance is required
V10	Operational hours of physical exercise services need to be added or changed.
V11	It needs training and instructor instructor to always give full personal attention to the customer

In recommendation of service quality improvement on physical exercise service, priority on service element has the biggest negative gap value 5. If there is more than one service indicator that has the same largest negative 5 gap, then all indicators with the largest negative gap 5 will be recommended as service quality improvements.

The following is an example of recommendation recommendation of service quality improvement on physical exercise service based on table 7 is as follows :

" Given the biggest negative gap value 5 on the physical exercise service is -0.60. Namely variable V10 regarding the statement "Physical exercise services have a convenient operational time for customers."

So Suggestion repair service quality at service of physical exercise based on table 8 is as follows:

Operational hours of physical exercise services need to be added or changed.

2.9.3 Multi-Channel Integration Process

At this time BKOM Bandung has been using some channel channel to support running business process. Below is a channel channel used BKOM Bandung can be seen in table 9.

Table 9. Media Communication BKOM Bandung

No.	Media Communication	Explaination
1	Website BKOM Bandung	Is a communication medium used by BKOM Bandung to provide information about the service, company profile and existing events.
2	A box of criticisms and suggestions	Is a communication medium for customers who are used to convey criticism and suggestions
3	Customer satisfaction survey box	Is a media for customers to give satisfied or dissatisfied opinion to all services in BKOM Bandung.
4	Phone service	Is a communication medium that can be used by customers to get information about services in BKOM Bandung.

In the proposed system there is integration of service quality survey with member registration, so that only BKOM Bandung subscribers have registered as member who can fill the service quality survey. The features contained in the proposed system can be seen in table 10.

Table 11. Features On the Proposed System

No.	Features	Explanation
1	Member registration	It is a feature to add subscribers as members. So that only customers who have become members who can fill the survey.
2	Quality of Service Survey	Customers can fill out surveys to assess the quality of service BKOM Bandung
3	Criticism and suggestions	Customers can submit critiques and suggestions when filling out quality service surveys.
4	Recommendation for service improvement	Community complaints teams can see recommendations on improving service quality based on survey results.

2.9.4 Information Management Process

Based on the results of the development process of BKOM Bandung strategy requires a website-based information system for filling surveys and delivery of criticism and suggestions. While the development of information systems required repository data to accommodate all the required information. Data repository information system BKOM Bandung can be seen in table 12.

Table 12. Data Repository

No.	Information Technology	Explaination
1	Customer data	Customer data is personal data about customers such as name, address, date of birth, phone number, occupation, and customer education.
2	Survey Answer Data	Survey answer data is the answer data from a quality service survey that has been filled by the customer
3	Criticism and Feedback Data	Critical and suggestion data is critical data and suggestions for the company provided by the customer.
4	Service Data	Data service is data about services that exist in BKOM Bandung.

2.9.5 Performance Assesment Process

In the performance appraisal BKOM Bandung has a guideline that is Minimum Service Standards Community Health Sports Center (BKOM) [8]. The expectation is taken based on Minimum Service Standard Balai Kesehatan Sports Society to the results of the calculation of service quality.

Here is the expected analysis of the related variables based on the results of the calculation of service quality in physical exercise services can be seen in table 13.

Table 13. Analysis of Expectations of Physical Exercise Services

Expectations	Var	GAP	Conclusion
The realization of a quality sports service and standards.	V1	-0,13	All the variables are still negative so they have not met expectations
	V2	-0,07	
	V4	-0,13	
	V5	-0,17	
Availability of affordable, accessible, and sustainable sports health services.	V10	-0,60	All the variables are still negative so they have not met expectations
Protect the public against the negative impact of health services that do not meet the standards of sports.	V3	-0,10	All the variables are still negative so they have not met expectations
	V8	-0,23	
	V9	-0,20	
The fulfillment of community rights in the field of sports health.	V6	-0,23	All the variables are still negative so they have not met expectations
	V7	-0,10	
	V11	-0,17	

2.9 System Testing

At this stage is a continuation of the implementation phase of testing the applications built. Testing information systems Customer Relationship Management has two stages of testing, namely testing alpha and beta.

2.9.1 The conclusion of alpha testing

Based on the results of functional testing conducted to eat can be concluded that customer relationship management information system that has been built has been able to run well and in accordance with the intent and purpose of the study.

2.9.2 Conclusion beta testing

Based on the results of interviews and the results of questionnaires with existing users can be concluded that this information system is appropriate and can be understood by the user.

3. CLOSING

3.1 Conclusion

Information Systems Customer Relationship Management BKOM Bandung has built and tested the system so that it can be concluded that.

Information Systems Customer Relationship Management BKOM Bandung this can help the complaints team in assessing the indicators of quality of service and recommend the proposed service improvement at BKOM Bandung.

3.2 Suggestion

Information Systems Customer Relationship Management BKOM Bandung is certainly still there are shortcomings, the deficiencies can be fixed in future research. The suggestions for future system development is to add an email / sms gateway feature to remind customers when there is a survey filling period.

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