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Implementation of the Importance Performance Analysis Method in Measuring the Level of Community Satisfaction with Service Performance

Efrida R. Haumetan [1] *, Darsono Nababan [2], Krisantus J. Tey Seran [3]

[1,2,3)]Departement of Information and Technology, University of Timor

**E-mail: [1,*] efridahaumetan@gmail.com, [2]darsono.nababan@unimor.ac.id, [3]Krisantusteyseran@unimor.ac.id*

Abstract

Service can be said to be satisfactory, if the service can meet community satisfaction. A satisfaction is achieved if the service received by the community is in accordance with what is expected. To determine the level of community satisfaction with service performance at the Department of Population and Civil Registration, North Central Timor Districts, it is necessary to have a system to measure the level of community satisfaction. The measurement of community satisfaction is carried out using the Importance Performance Analysis (IPA) method which considers the level of interest or expectations of the respondents, with indicators or dimensions in the form of physical tangibles, reliability, responsiveness, assurance, and empathy. The result of this research is the construction of a website-based Measurement System that is able to determine the level of community satisfaction with the performance of the services provided. Measurement using the IPA method, obtained performance that must be improved or reduced based on its quadrant mapping with 25 attributes, which are divided into 4 quadrants, namely quadrant I (main priority) 8attributes, quadrant II (maintain achievement) 3 attributes, quadrant III (low priority) 3 attributes, and quadrant IV (excessive) 11 attributes.
Keywords: *Service, Community satisfaction, Dukcapil, Measurement, Science method.*

1. Introduction

Basically every human being needs service, even service becomes something that cannot be separated and abandoned in social life. One of the services provided to the community is public service. Public services are the main tasks and obligations of the government that must be implemented and realized. A service is considered satisfactory if the service can meet the needs and expectations of customers. If the customer is not satisfied with a service provided, then the service can be ascertained to be ineffective and efficient, this indicates that the service performance is less than optimal. For this reason, efforts are needed to improve the quality of public services. Of the many services in the North Central Timor District, the Population and Civil Registration Service is one of the offices that provides public services. The public service process in Population and Civil Registration Service, still encounters problems in its implementation. This can be seen from the complaints of citizens regarding the complicated service procedures and unclear requirements in managing letters. Some of the services provided are the making of Identity Cards, Family Cards, and Birth Certificates carried out by Civil Servants. Currently there are methods to measure the level of service satisfaction such as the Service Quality method, the Performance Importance Method, the K-Means Clustering method, the K-Means Algorithm method, and the Importance Performance Analysis method. Of these several methods, Importance Performance Analysis is the best method that can measure patient satisfaction by involving analysis of customer attitudes towards prominent product or service attributes, and helping practitioners prioritize opportunities to improve product or service quality attributes directly [1]. Previously, there was a related research, discussing service quality with the title "Measuring the Level of Land and Building Tax Service Using the Service Quality Method". The study discussed how to measure the level of service satisfaction for taxpayers, and DISPENDA employees, using the Servqual (Service Quality) method [2]. The program is made by adjusting the results of a predetermined system design. Based on the background

described previously, this study is proposed to measure the level of community satisfaction with services at Department of Population and Civil Registration, by applying the Importance Performance Analysis method named MEASUREMENT SYSTEM.

2. Research Methodology

2.1 Research Stages

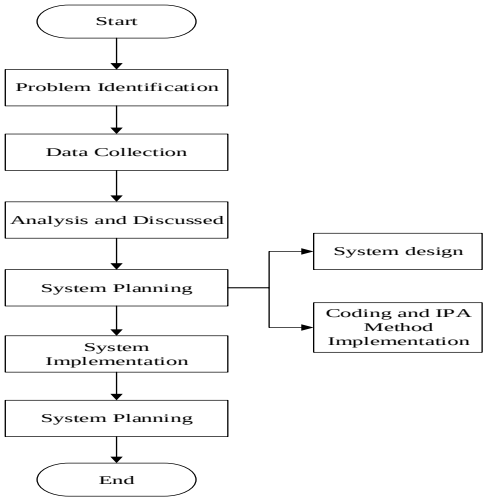

Figure 1: Research Stages

1. Problem Identification
   At this stage the researcher identifies the research problem and then sets the research objectives that the researcher will do. It is intended that the results of the research conducted can solve the problems in this study [3].
2. Data Collection
   Data collection carried out in this study is to use primary data and secondary data. Primary data are conducting interviews, and questionnaires to Dukcapil visitors, while secondary data is obtained through reference to journals, books, and theses that discuss community satisfaction. Furthermore, data processing is carried out and adjusted to the research topic carried out so that it will answer the existing problems.
3. Analysis and Discussed
   The analysis is carried out on a number of data that have been determined, compiled, grouped and then discussed and system design is carried out.
4. System planning
   This stage is a continuation of the analysis and discussion, where the program is designed according to what has been determined. In designing the MEASUREMENT SYSTEM starting from the design stage, then coding and implementing the importance performance analysis method.
5. System Implementation
   Implementation, is the application of a program or system into a computer system, which requires several requirements that must be adapted to existing programs, such as software, hardware and brainware specifications.
6. System Testing
   System testing will be carried out with Black Box testing. Testing needs to be done to see or adjust whether the finished system is in accordance with its functionality or not.

2.2 *Importance Performance Analysis Method*

The Importance Performance Analysis (IPA) method is a tool in analyzing or used to compare to what extent the performance/service that can be felt by service users is compared to the desired level of satisfaction [4].
The steps in using the IPA method are described as follows [5]:

1. Determining the level of performance and the level of importance, in the assessment using a Likert scale to assign weights from numbers 1 to number 4.
2. The calculation of the level of conformity (Tki) resulting from the level of performance and the level of consumer interest, namely:
   $$\boldsymbol{Tki} = \frac{x_i}{y_i} \text{ x } 100\% \quad (1)$$
   Where:
   TKi= Respondent's level of conformity
   Xi = Performance appraisal score
   Yi = Respondent's expectation score
3. The average calculation of each attribute, which will produce an average score of performance level (X) and an average score of importance level (Y), can be seen as follows:

$$\overline{\boldsymbol{X}} = \sum \frac{\bar{x}_i}{n} \quad \overline{\boldsymbol{Y}} = \sum \frac{\bar{y}_i}{n} \tag{2}$$

Where:

$\bar{X}$ = Average score of performance level

$\bar{Y}$ = Average score of importance level

n = Number of respondents

4. The calculation of the overall average of the attributes of the performance level and the level of importance, so that the results can be used in the division of quadrants, can be seen as follows:

$$\overline{\overline{\boldsymbol{X}}} = \sum \frac{\bar{x}_i}{\boldsymbol{k}} \quad \overline{\overline{\boldsymbol{Y}}} = \sum \frac{\bar{y}_i}{\boldsymbol{k}}$$

$Where$:

$\overline{\bar{X}}$ = Average of all performance level attributes

$\overline{\bar{Y}}$ = Average of all importance level attributes

k = Number of attributes that affect customer satisfaction

5. Map all the average values of importance and performance into the importance performance analysis diagram in the form of a Cartesian diagram so as to determine the Low or High category for each average level of importance and performance based on the presence of attributes in the diagram section [6] [7]. This Cartesian diagram maps 4 quadrants as shown in Figure 2.

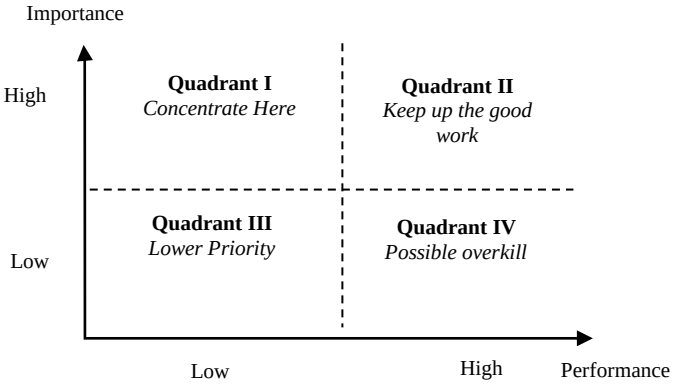

Figure 2: Kartesius Diagram

The position of each indicator in the four quadrants can be explained as follows:

a. Quadran I (*Concencrate These*)
   This area is considered important by customers, but in reality it is not in accordance with customer expectations (the level of satisfaction obtained is still low). The indicators that fall into this quadrant must be improved.
b. Quadran II (*Keep Up the Good Work*)
   This area is considered important by the customer, and is considered by the customer to be in accordance with what he feels so that the level of satisfaction is relatively high. The indicators that fall into this quadrant need to be maintained because they are superior in the eyes of customers.
c. Quadran III (*Low Priority*)
   This area is considered important by customers, and in reality it is not performing very well. The indicators included in this quadrant can be reconsidered because their effect on the benefits perceived by customers is very small.
d. Quadran IV (*Possible Overkill*)
   This area is considered less important by customers, and is felt to be too redundant. The variables included in this case can be reduced so that the company can save costs.

2. Result and Discussion

3.1 System Analysis

System analysis is a technique in solving a problem by deciphering component parts by studying these parts work and interacting to achieve the goals of a system to be built [8]:

a. Performance Level
   Guidelines that will be used by respondents to assess the level of performance with a weight of 1 to 4, can be seen in table 1.

Table 1: Level of Performance

Number	Description	Score
1	Very Good	4
2	Good	3
3	Quite Good	2
4	Not Good	1

b. Level of Importance
The guidelines that respondents will use to assess the level of importance with a weighted value of numbers 1 to 4 can be seen in table 2:

Table 2: Level of Importance

Number	Description	Score
1	Very Important	4
2	Important	3
3	Quite Important	2
4	Not Important	1

c. The criteria for the level of conformity can be seen in table 3:

Table 3: Criteria Level of Conformity

Number	Description	Score
1	Very Suitable	>100
2	Suitable	=100
3	Not Suitable	<100

d. The list of questions and indicators that will be used in determining the level of community satisfaction with service performance in Dukcapil is in table 4 [9]:

Table 4: List of Question

Indicator Code	Indicator	Question	Code
A	Reliability	Serving precision by the employee	A1
		Provide solutions by quick and precise handling	A2
		Suitability of service requirements with the service type	A3
		Fast service that the community needs	A4
		Explicit standard of providing service	A5
B	Responsiviness	Easiness in managing files	B1
		Response of the employee to people who want to be served	B2
		Accurasy of providing services by the employee	B3
		Employee's ability to communicate well in serving the public	B4
		The service can still run properly when network system error occurs	B5
C	Assurance	Provide accurate information about residence document requirements	C1
		SIAK (population administration information system) makes public services become easier	C2
		Politeness of the employee in providing services	C3
		Friendliness of the employee in providing services	C4
		Safekeeping documents	C5
D	Empathy	Provide the same services regardless of social status	D1
		Greet and smile when people come	D2
		Able to help people who are confused about filling in forms	D3
		Employee's willingness to appreciate and serve	D4
		Sincerity in responding to public requests	D5
E	Tangibles	Availability of facilities (wifi, toilet, nursing room, and drinking water)	E1
		Availability of well-organized parking space	E2
		Clean page	E3
		Availability of public queuing area	E4
		Easy access for the public in requesting services	E5

3.2 System Planning

3.2.1 System Flowchart

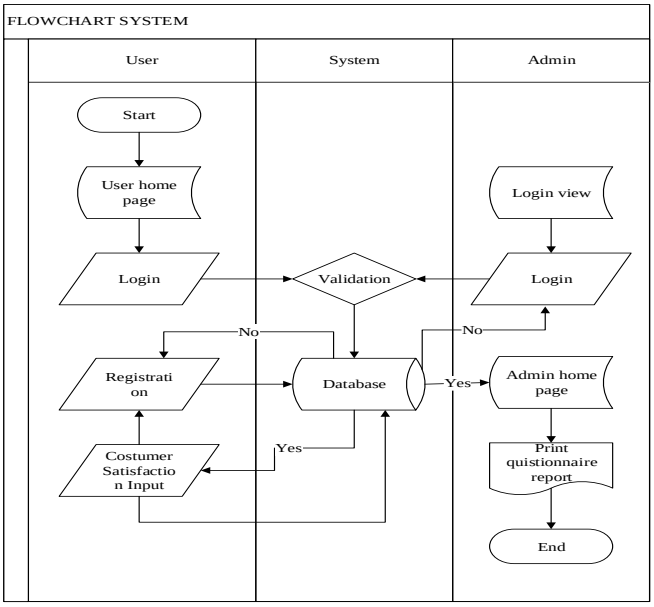

Figure 3: System Flowchart

3.2.2 Implementation of the Importance Performance Analisys (IPA) Method

1. The average value of employee performance questionnaires (X) and the community interests (Y) data divided by the number of respondents will be points X and Y in the Cartesian diagram. Thus, it automatically generates a point on X and Y which determines the quadrant of each variable.

Table 5: Average values of performance levels and importance

Code	Performance(X)	Importance(Y)
A1	4.94	4.16
A2	4.84	4.34
A3	4.7	4.11
A4	4.91	4.34
A5	4.86	4.02
B1	4.9	4.44
B2	4.8	4.15
B3	4.93	3.91
B4	4.99	4.21
B5	4.78	4.33
C1	4.65	4.36
C2	4.96	4.67
C3	4.87	4.88
C4	4.9	4.33
C5	5.03	4.39
D1	4.39	4.48
D2	4.59	4.05
D3	4.61	4.64
D4	4.73	4.79
D5	4.65	4.59
E1	4.71	5.07
E2	4.44	4.92
E3	4.78	4.94
E4	4.54	5.01
E5	4.25	4.83
Skor X, Y	**118.75**	**111.96**

2. The level of conformity results will be the determinant to whether or not the performance meets community's expectation.

Table 6: Level of Conformity (Tki)

Code	Suitability Level
A1	118.75%
A2	111.5207%
A3	114.3552%
A4	113.1336%
A5	120.8955%
B1	110.3604%
B2	115.6627%
B3	126.087%
B4	118.5273%
B5	110.3926%
C1	106.6514%
C2	106.2099%
C3	99.79508%
C4	113.164%
C5	114.5786%
D1	97.99107%
D2	113.33335%
D3	99.353455%
D4	98.74739%
D5	101.3072%
E1	92.89941%
E2	90.2439%
E3	96.76113%
E4	90.61876%
E5	87.99172%

3. The calculation results of the overall average of attributes X and Y, are used in the division of quadrants:
$\overline{\overline{X}} = \sum \frac{\bar{x}_i}{k}$ $\overline{\overline{X}} \frac{118.75}{25} = 4.75$
$\overline{\overline{Y}} = \sum \frac{\bar{y}_i}{k}$ $\overline{\overline{Y}} \frac{111.96}{25} = 4.4784$
4. Cartesian diagram
Maps all the average value of the level of interest (X) and performance (Y) into the importance performance analysis diagram in the form of cartesian diagram

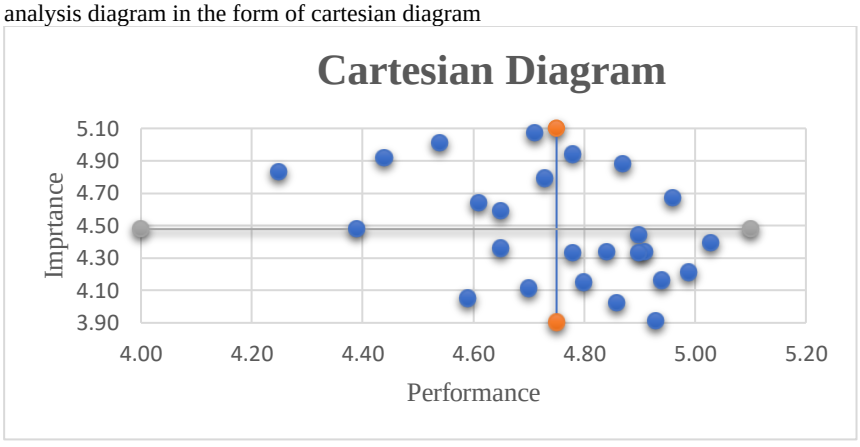

Figure 3: Cartesian Diagram

Quadrant 1: D1, D5, D3, D4, E1, E4, E2, E5
Quadrant 2: C2, C3, E3
Quadrant 3: A3, D2, C1
Quadrant 4: B3, A5, A1, B4, B2, C5, B1, A2, B5, C4, A4

3.2.3 System Implementation

System implementation is a system procedure performed to complete the design of an approved system such as testing, installing, and starting using a new system or a repaired system. System implementation is the stage of putting the system so that it is ready for operation [10].

Figure 4: Dashboard Page View

3. Conclusion

With the construction of this system can facilitate the Department of Population and Civil Registration, in knowing the level of community satisfaction so that it can accelerate the improvement of performance that has not been in accordance with community expectations in improving services in accordance with the attributes of deficiencies that cause public dissatisfaction with the performance provided. Based on the results of the implementation of the Importance Performance Analysis method on the Measurement System, the attributes that must be improved or reduced based on the quadrant mapping generated from the IPA method with 25 statement attributes which are divided into 4 quadrants get the results, namely quadrant I (main priority) 8 attributes, quadrant II (maintain achievement) 3 attributes, quadrant III (low priority) 3 attributes, and quadrant IV (excessive) 11 attributes.

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