

QUALITY ANALYSIS OF ORPHAN PMKS SYSTEMS WITH WEBQUAL 4.0 AND IPA METHODS

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Abstract: The PMKS Orphan Data Collection System is specifically designed to collect data on orphans in Central Lombok Regency. Although it has been around since its creation, there has been no assessment made of the quality of this system. Therefore, this study aims to analyze the quality of the PMKS Data Collection Information System for Orphans using the WebQual 4.0 method and Importance Performance Analysis (IPA). This study aims to identify factors that affect system service quality, focusing on four WebQual 4.0 variables, namely usability, information quality, service interaction, and User Satisfaction. Data was collected through distributing questionnaires and analyzed using IPA methods to assess users' views and expectations of the system. The results of the analysis showed that overall, the quality of this system was rated very good with the Webqual Index score reaching a score of 77%. However, there are certain areas that still need improvement, the PMKS Data Collection System for Orphans has a conformity rate of 98% and an average gap value (GAP) - 0.06929. Priority is directed at quadrant I and quadrant 3. Improvement recommendations can be made by prioritizing indicators found in quadrants I and III based on the results of the IPA analysis. Thus, effective improvement efforts can be directed to improve the quality of the PMKS Data Collection System for Orphans in accord with user expectations.

Keywords: analysis; Importance Performance Analysis (IPA); orphans; PMKS; WebQual 4.0

Abstrak: Sistem Pendataan PMKS Anak Yatim-Piatu dirancang khusus untuk mengumpulkan data anak yatim di Kabupaten Lombok Tengah. Meskipun telah ada sejak pembuatannya, belum ada penilaian yang dilakukan terhadap kualitas sistem ini. Karena itu, penelitian ini bertujuan untuk menganalisis kualitas Sistem Informasi Pendataan PMKS Anak Yatim-Piatu dengan menggunakan metode WebQual 4.0 dan Importance Performance Analysis (IPA). Penelitian ini memiliki tujuan untuk mengidentifikasi faktor-faktor yang memengaruhi kualitas layanan sistem, dengan fokus pada empat variabel WebQual 4.0, yaitu usability, information quality, service interaction, dan User Satisfaction. Data dikumpulkan melalui menyebarkan kuesioner dan dianalisis dengan metode IPA untuk menilai pandangan dan harapan pengguna terhadap sistem. Hasil analisis menunjukkan bahwa secara keseluruhan, kualitas sistem ini dinilai sangat baik dengan nilai Webqual Index mencapai skor 77%. Namun, terdapat area tertentu yang masih memerlukan perbaikan, Sistem Pendataan PMKS Anak Yatim-Piatu memiliki tingkat kesesuaian sebesar 98% dan nilai rata-rata kesenjangan (GAP) -0.06929. Prioritas perbaikan diarahkan pada kuadran I dan kuadran 3. Rekomendasi perbaikan dapat dilakukan dengan memprioritaskan indikator yang ditempatkan pada kuadran I dan III berdasarkan hasil analisis IPA. Dengan demikian, upaya perbaikan yang efektif dapat diarahkan untuk meningkatkan kualitas Sistem Pendataan PMKS Anak Yatim-Piatu sesuai dengan harapan pengguna.

Kata kunci : anak yatim-piatu; analisis; Importance Performance Analisis (IPA); PMKS; WebQual

INTRODUCTION

Information and communication technology plays a major role in improving service quality, where the internet is the main means of accessing various information and data. The existence of a website is one form of internet utilization [1][2]. The Central Lombok Regency Social Service has built and developed a data collection system with the name PMKS Orphans with the address <https://pmks.lomboktengahkab.go.id/> [3].

Orphaned PMKS Data Collection System is system system that is used to record information about orphan data in Central Lombok Regency. This system was created in 2020 with the aim of monitoring the number of orphans in Central Lombok Regency. This system is designed specifically for parties involved in data collection activities throughout the Central Lombok region. Including the super admin from the Social Service, the Regent of Central Lombok, and 139 other orphan data collectors.

Based on the results of the author's interview with Mr. Tatang as the PMKS operator at the Social Service that so far the manager has never measured the quality of the System on Orphaned PMKS that was built, so it is difficult to know how far the system meets user satisfaction and expectations in public services related to information on the Orphaned PMKS Data Collection System [4][5]. The importance of this research was carried out to evaluate the effectiveness of the system as well as identifying aspects that need to be improved to ensure user satisfaction [6]. With this research, it is hoped that it can help managers to optimize system performance and improve the quality of the system.

The quality assessment of a website can be determined using the WebQual approach, which was developed by Barnes and Vidgen since 1998, has undergone four changes and is often used to assess the quality of website services based on user evaluations [7][8][9].

The Importance-Performance Analysis (IPA) method helps identify factors or attributes that are important to an agency in meeting user satisfaction [10][11].

Lila Setiyani, Jaki Wagjar, Evelyn Tjandra, conducted research in 2020 with the title "Analysis of the Quality of the Dapodik Application System at the Coordinating Committee of the Ministry of Education. This research method uses WebQual From the three indicators of the variable measuring the quality of the Dapodik system based on the webqual method which includes usability, information quality and service interaction quality and consists of 22 questionnaire instrument items, all of which have met the validity and reliability requirements [12].

Sylvi Ellyusman, Rieka F Hutami, conducted research in 2017 with the title "Quality Analysis of Academic Information Systems Using the Importance Performance Analysis (Ipa) Method". This research uses Quantitative Methods with Descriptive Analysis Techniques (Level Analysis) and the Importance Performance Analysis Method (IPA) based on WebQual indicators. 4.0. The questionnaire was distributed to 439 student respondents in seven faculties at XYZ University, as well as conducting interviews with operational managers and data center managers of the Directorate of Information Systems [13].

METHOD

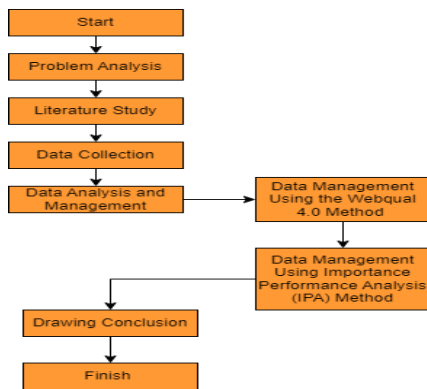


Image 1. Research method

Steps from The research is as follows:

Problem Analysis

In this section the author carries out the identification and analysis of problems that exist in the Central Lombok Social Service [14].

Literature Study

At this stage, collecting references that contain information related to research that is relevant to the problem at hand [14].

Data Collection

Conducting information searches with three stages, namely observation, interviews and distributing questionnaires to 139 data collectors who record orphans in Central Lombok Regency, with 60 people taken as samples based on the Slovin formula [15]:

$$n = \frac{N}{1 + Ne^2} \quad (1)$$

Explanation:

n = Explains the Total Sample

N = Explains the Total Population

1 = Is a Constant Value

e2 = Critical value 10% = 0.1

Data Analysis and Management

Initial data obtained from the results of distributing questionnaires to data col-

lectors of the Orphaned PMKS Data Collection System. Orphans will be analyzed using MS Excel tools and IBM SPSS software. The first analysis is to group respondents based on the same characteristics according to the responses selected in the research questionnaire [14].

Data Management Using the Webqual 4.0 Method

Validation Test

This stage compares the r_{count} value with r_{table} . A questionnaire is considered correct if the value of $r_{count} > r_{table}$. Where (r_{table}) is obtained by the following formula:

$$Df = N - 2 \quad (2)$$

In this study, n (number of respondents) = 60 people, so to calculate the r_{table} value, namely $df = n - 2 = 60 - 2 = 58$, with a significant 0.05 so that the r_{table} is obtained at 0.254 [16].

Reliability Test

Reliability measurement is done by finding the Cronbach's Alpha value, where the data is considered reliable if the Cronbach's Alpha value is > 0.60 [15][14].

Webqual Index (WQI)

WQI (Webqual Index) is used to assess the overall quality of a website. Max-imum Score is the result of multiplying the weighted importance with the highest scale. Weighted Score is obtained from the average total result multiplied by the average value of the user research [17][18]. The steps that need to be taken to calculate the Webqual Index (WQI) value, namely:

Average

This is the average value of all respondents' answers to the performance level questionnaire.

MoI (Mean of Importance)

Is the average value of all answers respondents on the importance questionnaire.

Maximum score

$$\text{maximum score} = \text{MoI} \times n \quad (3)$$

Description:

MoI = Mean of Importance

n = The highest weight of the importance scale

Weighted Score

$$\text{Weighted Score} = \text{Mean} \sum(I \times P) \quad (4)$$

Description:

I = average weight of importance level

P = average weight of satisfaction level

Webqual Index (WQI)

$$\text{Webqual Index} = \sum \frac{\text{Weighted Score}}{\text{Maximum Score}} \quad (5)$$

Data Management Using Importance Performance Analysis (IPA) Method

Suitability Analysis

Conformance Analysis compares the performance and importance of a website with the X (performance) and Y (importance) scales [16][6]. The formula used is as follows:

$$TKi = \frac{x_i}{y_i} \times 100\% \quad (6)$$

Explanation:

Tki = Conformity Value

xi = Performance Value

yi = Importance value

Gap Analysis

The calculation of the GAP value is used to determine the quality of the system based on performance and user expectations. If $GAP = 0$ or $GAP > 0$, system performance meets user expectations. If $GAP < 0$, website performance does not meet user expectations [1][19].

$$Q_i (GAP) = \text{perf}(i) - \text{imp}(i) \quad (7)$$

Explanation:

Qi (Gap) = Is the Score of the Gap

Perf (i) = Average score of each Performance Item

Imp (i) = Average score of each Importance Item

Quadrant Analysis

The Final Achievement Index graph divides user responses based on performance (X) and importance (Y) in 4 quadrants. Quadrant I (Top Priority), Quadrant II (Maintain Achievement), Quadrant III (Low Priority), Quadrant IV (Excessive) [1][20].

Drawing conclusions

At this stage, conclusions are drawn from the results obtained through the assessment of the WebQual 4.0 and IPA methods [21].

RESULTS AND DISCUSSION

At this stage contains the results and discussion of the research, where in this study the analysis is carried out is using webqual 4.0 method and Importance Performance Analysis on orphan PMKS data collection syste.

Validation test

Table 1. Validation Test

Variables	R_Calculate Performance	R_Calculate Importance	R_Table	Valid
U1	0.856	0.711	0.254	✓
U2	0.845	0.62	0.254	✓
U3	0.768	0.686	0.254	✓
U4	0.776	0.382	0.254	✓
U5	0.551	0.535	0.254	✓
U6	0.464	0.813	0.254	✓
U7	0.515	0.785	0.254	✓
Q1	0.611	0.661	0.254	✓
Q2	0.569	0.615	0.254	✓
Q3	0.682	0.573	0.254	✓
Q4	0.728	0.784	0.254	✓
Q5	0.718	0.684	0.254	✓
Q6	0.726	0.612	0.254	✓
Q7	0.699	0.494	0.254	✓
I1	0.712	0.524	0.254	✓
I2	0.689	0.624	0.254	✓
I3	0.651	0.531	0.254	✓
I4	0.567	0.439	0.254	✓
I5	0.498	0.727	0.254	✓
I6	0.377	0.674	0.254	✓
S1	0.641	0.602	0.254	✓
S2	0.608	0.68	0.254	✓
S3	0.657	0.667	0.254	✓
S4	0.614	0.584	0.254	✓
S5	0.631	0.588	0.254	✓
S6	0.702	0.623	0.254	✓
S7	0.632	0.654	0.254	✓
S8	0.747	0.495	0.254	✓

In Table 1, it can be concluded that all attributes are considered valid in this study because the r_count value is greater than the r_table value at a significance level of 0.05 with 60 respondents.

Realibilities Test

Table 2. Reliability Test

Variable	Cronbach's Alpha Performance	Cronbach's Alpha Impotence	Condition	Reliability
Utility	0.812	0.777	0.60	✓
Quality	0.800	0.742	0.60	✓
Interaction	0.606	0.611	0.60	✓

According to Table 2, it reveals that all the variables analyzed are considered reliable. This finding indicates that each instrument shows a reliable show the level of reliability in general The overall is very high, which is

expressed by the r_count value or Cronbach's alpha value > 0.6.

Webqual Index (WQI)

Table 3. Webqual Indaex (WQI)

Items	Rata-Rata	Mol	Max. Score	Wgt. Score	WQI	Total per Variabel	Total WQI
U1	3.05	3.18	12.72	9.699	0.76		
U2	3.08	3.17	12.68	9.764	0.77		
U3	3.12	3.08	12.32	9.61	0.78		
U4	2.93	3.10	12.4	9.083	0.73		
U3	3.12	3.08	12.32	9.61	0.78		
U4	2.93	3.10	12.4	9.083	0.73	5.35	
U5	3.07	3.08	12.32	9.456	0.77		
U6	3.07	3.05	12.2	9.364	0.77		
U7	3.08	3.12	12.48	9.61	0.77		
Q1	3.07	3.23	12.92	9.916	0.77		
Q2	3.22	3.08	12.32	9.918	0.81		
Q3	3.13	3.18	12.72	9.953	0.78		
Q4	3.12	3.08	12.32	9.61	0.78	5.45	
Q5	3.03	3.10	12.4	9.393	0.76		
Q6	3.13	3.22	12.88	10.08	0.78		
Q7	3.08	3.18	12.72	9.794	0.77	77%	
I1	3.13	3.17	12.68	9.922	0.78		
I2	3.18	3.22	12.88	10.24	0.80		
I3	2.97	3.10	12.4	9.207	0.74	4.62	
I4	3.12	3.25	13	10.14	0.78		
I5	3.07	3.17	12.68	9.732	0.77		
I6	3.02	3.07	12.28	9.271	0.76		
S1	3.03	3.15	12.6	9.545	0.76		
S2	2.92	3.10	12.4	9.052	0.73		
S3	3.10	3.13	12.52	9.703	0.78		
S4	3.00	3.17	12.68	9.51	0.75	6.08	
S5	3.07	3.13	12.52	9.609	0.77		
S6	3.02	3.12	12.48	9.422	0.76		
S7	3.13	3.12	12.48	9.766	0.78		
S8	3.05	3.18	12.72	9.699	0.76		
Amount			351.72	270.1	0.77		

The PMKS system scored 77% in quality analysis using the Webqual Index (WQI), indicating a very good quality level. However, there is a need for improvement with a focus on service interaction.

Table 4. Measurement Instrument

No	Likert Scale	Scores
1	Very Unfavorable	0-25
2	Not Good	26-50
3	Good	51-75
4	Very Good	76-100

Suitability Analysis

Table 5. Suitability Analysis

Items	Total Score (Performance)	Total Score (Importance)	100% Conformity Rate
U1	183	191	96%
U2	185	190	97%
U3	187	185	101%
U4	176	186	95%
U5	184	185	99%
U6	184	183	101%
U7	185	187	99%
Q1	184	194	95%
Q2	193	185	104%
Q3	188	191	98%
Q4	187	185	101%
Q5	182	186	98%
Q6	188	193	97%
Q7	185	191	97%
I1	188	190	99%
I2	191	193	99%
I3	178	186	96%
I4	187	195	96%
I5	184	190	97%
I6	181	184	98%
S1	182	189	96%
S2	175	186	94%
S3	186	188	99%
S4	180	190	95%
S5	184	188	98%
S6	181	187	97%
S7	188	187	101%
S8	183	191	96%
Average			98%

The results of the analysis in Table 5, it is concluded that all statement attributes of the suitability level have not reached 100%, or the level of suitability is still below 100%, with an overall average value of 98%. The conclusion that can be drawn is that the current system for collecting data on Orphaned Children's PMKS not yet achieve

performance that in accordance with user expectations

Gap Analysis

Table 6. Gap Analysis

Items	Average Performance	Average Importance	GAP
U1	3.05	3.18	-0.13
U2	3.08	3.17	-0.09
U3	3.12	3.08	0.04
U4	2.93	3.10	-0.17
U5	3.07	3.08	-0.01
U6	3.07	3.05	0.02
U7	3.08	3.12	-0.04
Q1	3.07	3.23	-0.16
Q2	3.22	3.08	0.14
Q3	3.13	3.18	-0.05
Q4	3.12	3.08	0.04
Q5	3.03	3.10	-0.07
Q6	3.13	3.22	-0.09
Q7	3.08	3.18	-0.1
I1	3.13	3.17	-0.04
I2	3.18	3.22	-0.04
I3	2.97	3.10	-0.13
I4	3.12	3.25	-0.13
I5	3.07	3.17	-0.1
I6	3.02	3.07	-0.05
S1	3.03	3.15	-0.12
S2	2.92	3.10	-0.18
S3	3.10	3.13	-0.03
S4	3.00	3.17	-0.17
S5	3.07	3.13	-0.06
S6	3.02	3.12	-0.1
S7	3.13	3.12	0.01
S8	3.05	3.18	-0.13
Average			-0.06929

From the results of data analysis in Table 6, it can be concluded that there is a level of gap between performance and expectations that results in a negative overall attribute value, with a total value of -0.06929. This indicates that the Orphaned PMKS data collection system has not operated in accordance with user expectations, and users feel that the current system performance is still unsatisfactory.

Cartesian diagram

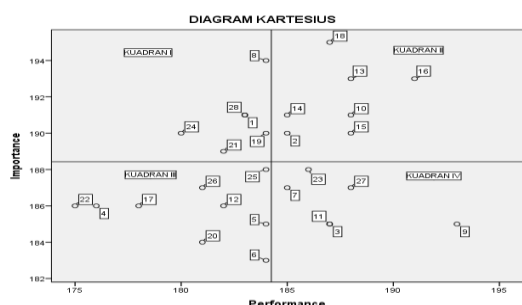


Image 2. Cartesian Diagram

The results obtained from the IPA Quadrant analysis, it can be concluded that the recommendations for improvement are in Quadrants 1 and 3.

CONCLUSION

The conclusion from the analysis of the quality of the Orphan PMKS Data Collection system using the WEBQUAL 4.0 and IPA methods shows that overall, the quality of the data collection system is very good This tem is rated very well with the Webqual Index reaching a score of 76%. However, there are certain areas that still require improvement. The suitability analysis shows a suitability level of 98%, with an average gap value of -0.06929 which indicates a negative value. After analyzing with IPA quadrants, it was found that improvements need to be made in Quadrant 1 and Quadrant 3.

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