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ANALYSIS OF IBOSS SYSTEM QUALITY MEASUREMENT IN AREA BUSINESS PERMIT MANAGEMENT USING WEBQUAL 4.0 AND IMPORTANCE PERFORMANCE ANALYSIS (Study at Badan Pengusahaan Batam)

Laura Maey Rizky[1*], Fandy Bestario Harlan[2]
[1, 2] Department of Management and Business, Politeknik Negeri Batam, Batam, Indonesia

Abstract
This study aims to analyze the quality of the Indonesia Batam Online Single Submission (IBOSS) system in managing area business permits at the Batam Business Agency using the WebQual 4.0 method and Importance Performance Analysis (IPA). The research method used is quantitative, with data collected through an online questionnaire distributed to IBOSS system users who have managed area business permits in 2024. The data obtained were analyzed using the paired sample t-test technique to test the difference between user perceptions and expectations and gap analysis and quadrant analysis were carried out. The results of the study showed that there was a significant difference between user perceptions and expectations of the quality of the IBOSS system in the three dimensions measured. The results of the gap analysis showed that information quality had the largest gap in the system. Meanwhile, the quadrant analysis identified several aspects that needed to be improved to increase user satisfaction, such as user convenience, output relevance, output reliability, and interaction security.
Keywords: IBOSS, WebQual 4.0, IPA, System, Licensing

INTRODUCTION

The Indonesian government emphasizes the importance of excellent public services as mandated by Law No. 25 of 2009 (Rukayat, 2017). To improve licensing efficiency, BP Batam developed the Indonesia Batam Online Single Submission (IBOSS) system to transition from manual processes to an integrated online platform (Sirait, 2021).

Throughout 2024, the IBOSS system experienced various obstacles that hampered its operations. The main obstacles that occurred included difficulties in submitting applications for Area Business Permits due to application bugs or data validation errors, disruptions to digital signatures due to verification failures, and obstacles in the registration process and updating user data. In addition, realization reports often failed to be uploaded, the user profile menu experienced access disruptions, and the payment system with banks experienced problems with unconfirmed transactions. Integration with Ministry/Institution applications also still experienced obstacles, especially in data synchronization and Application Programming Interfaces (APIs). In terms of infrastructure, there were obstacles such as firewalls that blocked system access and network connection disruptions that caused slow or inaccessible access. These obstacles indicate the need for technical improvements and system enhancements to ensure smooth operations.

Previous research using the TAM model assessed IBOSS user satisfaction at BP Batam, with the following results:

Table 1. Previous Research Data

Variables	Influence	T-Statistic Value
Perception of Ease of Usefulness	Positive and significant	6,950
Perception of Usefulness towards Attitude	Positive and significant	14,611
Perceived Ease of Attitude	No positive and significant effect	0,818
Perception of Usefulness on Satisfaction	No positive and significant effect	0,098
Perception of Ease of Satisfaction	Positive and significant	8,417
Perception of Ease of Satisfaction	Positive and significant	2,445

Source: (Sihombing & Zuliarni, 2024)

From table 1 it is concluded that there are variables that do not show a significant influence, which indicates that there are still aspects in the system that need to be improved in order to meet user expectations. Later, the author will compare the results of the study with the author's research using different methods in measuring system quality against user satisfaction. The goal is to validate the results of previous studies and see the consistency or differences in findings using different methods.

This study uses WebQual 4.0 and Importance Performance Analysis (IPA) to further explore those gaps and provide practical improvement priorities. Similar frameworks have been used in evaluating public digital platforms, confirming that usability and accessibility are key to user satisfaction (Alshira'H, 2020; Byun & Finnie, 2011).

WebQual 4.0 is a measurement to measure the quality of a website based on research instruments that can be categorized into four variables, namely Usability, Information Quality, Service Interaction Quality, Overall (Nada & Wibowo, 2015).

The Importance Performance Analysis method is a measurement method by comparing the performance of the service quality and the importance of the user regarding the service quality (Mandias et al., 2021).

The relationship between the use of WebQual and Importance Performance Analysis is that WebQual measures user perceptions of the quality of Usability, Information, and Service Interaction, then the results are analyzed with Importance Performance Analysis to compare the level of importance and performance in a quadrant diagram to determine improvement priorities.

RESEARCH METHOD

Population and Sample

In this study, the population used as the object of study is all users of the IBOSS system service who are processing business permits for areas at BP Batam during the 2024 period, totaling 1,280 companies.

The sampling technique used in this study is purposive sampling technique. The sample is calculated using the slovin formula with a margin of error of 10% is 93 companies. The researcher rounded the sample to 100 company samples.

Data Collection

1. Primary data, namely users of the Indonesia Batam Online Single Submission (IBOSS) service at BP Batam. Data collection was carried out by distributing questionnaires online in the form of Google Forms.
2. Secondary data, namely the author conducted a search for information from various official documents available at the Directorate of Goods Traffic.

Data Analysis

The data analysis used in this study is:

1. Descriptive Statistics

   According to Sugiyono (2014), descriptive statistics are statistics used to analyze data by describing or depicting the collected data as it is without intending to draw conclusions that apply to the public or generalize.
2. Instrument Test
   a. Validity Test

      Research validity is the degree of truth of the conclusions drawn from a study, which is influenced and assessed based on the research method used, the representativeness of the research sample, and the nature of the population from which the sample originated (Murti, 2011).
   b. Reliability Test

      (Octobe Purba et al., 2022) stated that reliability is the degree of consistency between two measurement results on the same object.
3. Classical Assumption Test
   Normality Test

   According to Duli (2019:114-115), the normality test aims to see whether the residual values are normally distributed or not.
4. Hypothesis Testing
   Paired Samples T-Test

   The paired t-test is a hypothesis testing method for paired data, where one individual receives two different treatments.
5. Importance Performance Analysis
   a. Conformity Level Analysis

      Suitability analysis aims to assess the alignment between website performance and the level of importance perceived by users towards certain features.

With the following formula:

$$TKi = \frac{\sum Xi}{\sum Yi} \; x \; 100\%$$

Information:

TKi : Conformity Results

Xi : Scores from the Performance Assessment

Yi : Scores from the Importance Assessment

b. Gap Analysis

Gap analysis aims to evaluate needs and assess the extent to which a program or system meets those needs.

With the following formula:

$$Qi = Performance\ i - Importance\ i$$

Information:

Qi : Gap Level

$Performance\ i$: Performance Value Results

$Importance\ i$: Importance Value Results

c. Quadrant Analysis

Quadrant analysis is an evaluation method that maps attributes into four categories based on performance and importance.

RESULTS AND DISCUSSION

Respondent Profile

The following is a recap of the gender of IBOSS users who have filled out the author's questionnaire.

Figure 1. IBOSS User Gender Diagram

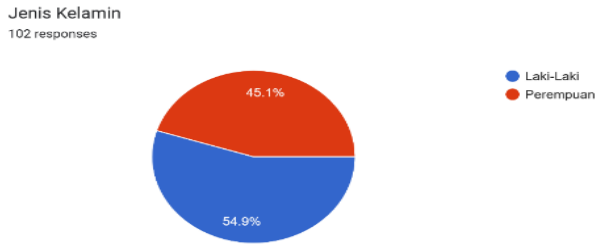
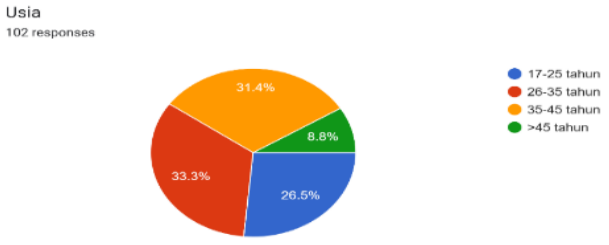


Figure 1 shows that the majority of IBOSS users are male, dominating the business permit management process.

The following is the age range of IBOSS users who filled out the author's questionnaire.

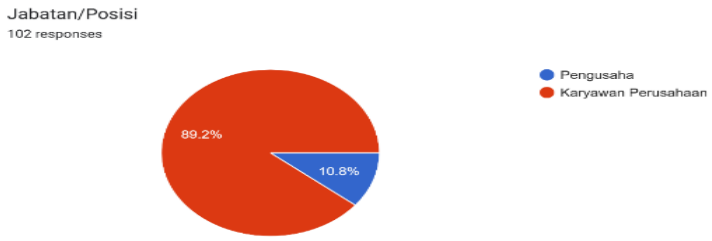
Figure 2. IBOSS User Age Diagram



It can be seen from Figure 2 that the age range of respondents using the IBOSS system who participated in filling out the questionnaire is quite diverse. However, the most dominant age group is in the range of 26 to 35 years.

The following are the positions of IBOSS users who have filled out the author's questionnaire.

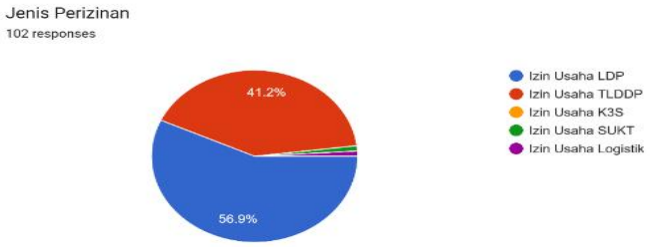
Figure 3. IBOSS User Job or Position Diagram



It can be seen from Figure 3 that the average position of IBOSS users who are taking care of business permits for the 2024 period who have filled out the author's questionnaire is a company employee.

The following are the types of IBOSS user permits that have filled out the author's questionnaire.

Figure 4. Diagrams of Types of Regional Business Permits



It can be seen from Figure 4 that there are 5 types of regional business permits that have filled out the author's questionnaire, namely Outside Customs Area, Other Places Within Customs Area, Contractor Cooperation Contract, Meanwhile for Certain Activities, and Logistics business permits. However, the Outside Customs Area Business Permit is the most in filling out the questionnaire.

Results

1) Descriptive Statistics

Ardhini & Ganggi (2019) said that to measure the level of user satisfaction with each questionnaire statement, a Likert interval scale was used.

Mark	Explanation
1,00 - 1,75	Very bad
1,76 - 2,50	Bad
2,51 - 3,25	Good
3,26 - 4,00	Very good

Table 2. Average Results of Usability Quality

No	Statement	Perception	Expectations
1	I feel the IBOSS system has an attractive appearance	3.46	3.69
2	I feel the design of the IBOSS system suits the type of system	3.59	3.68
3	I found it easy to navigate within the IBOSS system	3.46	3.68

No	Statement	Perception	Expectations
4	I found it easy to learn how to operate the IBOSS system	3.51	3.72
5	I find it easy to interact with the IBOSS system	3.52	3.66
6	I find the IBOSS system easy to use	3.51	3.75
7	I feel the IBOSS system is accessible at all times	3.65	3.8
8	I feel the IBOSS system creates a positive experience for users	3.56	3.72
Average		**3.53**	**3.71**

Source: Processed data, 2025

Table 2 shows the average result on the perception for Usability Quality is 3.53. This value indicates that users feel quite comfortable in using the system, navigating, and interacting with existing features. However, there is room for improvement so that users feel more satisfied.

And the average result on expectations is 3.71. This value reflects that users have greater expectations compared to the reality they experience, which can be caused by various obstacles that have been identified, such as application bugs and difficulties in the interaction process.

Table 3. Average Results of Information Quality

No	Statement	Perception	Expectations
9	The IBOSS system provides relevant information	3.51	3.76
10	The IBOSS system provides ease in understanding information	3.61	3.76
11	The IBOSS system provides relevant information with precise details	3.55	3.76
12	The IBOSS system provides information in the correct format	3.59	3.77
13	The IBOSS system provides accurate information	3.47	3.79
14	The IBOSS system provides reliable information	3.54	3.78
15	The IBOSS system provides up to date information	3.61	3.85
Average		**3.55**	**3.78**

Source: Processed data, 2025

Table 3 shows the average result on perception for Information Quality is 3.55. Users consider that the information provided by the system is generally accurate and reliable, but they feel that not all their information needs are optimally met.

And the average result on expectation is 3.78. This value shows that users have higher expectations compared to their actual experience, which indicates the importance of improving information delivery.

Table 4. Average Results of Service Interaction Quality

No	Statement	Perception	Expectations
16	IBOSS system has a good reputation	3.4	3.7
17	I feel safe to interact with the IBOSS system	3.39	3.75
18	I feel my personal information is safe on the IBOSS system	3.35	3.73
19	The IBOSS system provides room for personalization	3.35	3.72
20	I always get notifications regarding the process of submitting the licensing documents that I	3.43	3.73

No	Statement	Perception	Expectations
	have submitted		
21	I feel the IBOSS system responds according to what I do	3.71	3.7
Average		**3.43**	**3.72**

Source: Processed data, 2025

Table 4 shows the average result on perception for Service Interaction Quality is 3.43. Users feel that despite efforts to provide good service, there are aspects such as responsiveness, trust, and security that are not fully satisfactory.

And the average result on expectation is 3.72. This value shows that users have higher expectations compared to their actual experience, which reflects the importance of improving the quality of service interaction.

In general, the IBOSS system is considered very good and meets expectations, but still needs enhancements to usability.

2) Instrument Test

The validity test results for each statement have a Pearson Correlation value (r-count) above the r-table value of 0,1966, which is declared valid. The reliability test results for each dimension have a Cronbach's Alpha value above 0.6, which is declared reliable.

3) Classical Assumption Test

Normality Test

The normality test is carried out to determine whether the values that have been tested are normally distributed.

Table 5. Normality Test Results

Asymp. Sig. (2-tailed)[c]		.200[d]
Sig.		.242
99% Confidence Interval	Lower Bound	.231
	Upper Bound	.253
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Source: Processed data, 2025

Table 5 shows the results of the normality test for each dimension with a value of 0.200 > 0.05, meaning it is normally distributed.

4) Hypothesis Testing

The paired samples t-test was conducted to determine whether the test results for each dimension showed significant differences.

Table 6. Results of Paired Samples T-Test on Usability Quality

Paired Samples Test								
	Paired Differences							
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			

Pair 1	PERSEPSI - HARAPAN	-.18000	.43386	.04339	-.26609	-.09391	-4.149	99	.000

Source: Processed data, 2025

Table 6 shows the results of the paired samples t-test on perceptions and expectations for the Usability Quality dimension, which has a value of 0.000 < 0.05, meaning there is a significant difference.

Table 7. Results of Paired Samples T-Test on Information Quality

Paired Samples Test									
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	PERSEPSI - HARAPAN	-.22714	.46083	.04608	-.31858	-.13570	-4.929	99	.000

Source: Processed data, 2025

Table 7 shows the results of the paired samples t-test on perception and expectations for the Information Quality dimension, which has a value of 0.000 < 0.05, meaning there is a significant difference.

Table 8. Results of Paired Samples T-Test on Service Interaction Quality

Paired Samples Test									
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	PERSEPSI - HARAPAN	-.28333	.52731	.05273	-.38796	-.17870	-5.373	99	.000

Source: Processed data, 2025

Table 8 shows the results of the paired samples t-test on perceptions and expectations for the Service Interaction Quality dimension, which has a value of 0.000 < 0.05, meaning there is a significant difference.

5) Importance Performance Analysis

Conformity Level Analysis

The suitability level analysis has criteria, namely if the value is more than or equal to 100% it is stated as good. And if the value is less than 100% it is stated as not good (Adiyansah dkk., 2020).

Table 9. Results of Usability Quality Conformity Level Analysis

No	**Statement**	**Perception (X)**	**Expectations (Y)**	**Tki**
		Total	**Total**	
1	I feel the IBOSS system has an attractive appearance	346	369	93.77%
2	I feel the design of the IBOSS system suits the type of system	359	368	97.55%
3	I found it easy to navigate the IBOSS system	346	368	94.02%

No	Statement	Perception (X)	Expectations (Y)	Tki
		Total	Total	
4	I found it easy to learn how to operate the IBOSS system	351	372	94.35%
5	I find it easy to interact with the IBOSS system	352	366	96.12%
6	I find the IBOSS system easy to use	351	375	93.6%
7	I feel the IBOSS system is accessible at all times	365	380	96.05%
8	I feel the IBOSS system creates a positive experience for users	356	372	95.70%
Total Conformity Rate				95.15%

Source: Processed data, 2025

Table 9 shows the total level of conformity of perception and expectation on Usability Quality is 95.15%. The highest value is in the statement "I feel the design of the IBOSS system is in accordance with the type of system" which is 97.55%. The lowest value is in the statement "I feel the IBOSS system is easy to use" which is 93.6%. From the results, the value is less than 100% is stated as not good or not in accordance with user expectations. Based on the results of interviews with IBOSS users related to statements with low values, the IBOSS system has several shortcomings:

1) There is no filter or quick search feature, so users have to search manually to see their permission status.
2) There is no automatic notification feature to notify users if there are any requirement improvements that need to be made.

Table 10. Results of Information Quality Conformity Level Analysis

No	Statement	Perception (X)	Expectations (Y)	Tki
		Total	Total	
9	The IBOSS system provides relevant information	351	376	93.35%
10	The IBOSS system provides ease in understanding information	361	376	96.01%
11	The IBOSS system provides relevant information with precise details	355	376	94.41%
12	The IBOSS system provides information in the correct format	359	377	95.23%
13	The IBOSS system provides accurate information	347	379	91.56%
14	The IBOSS system provides reliable information	354	378	93.65%
15	The IBOSS system provides up to date information	361	385	93.77%
Total Conformity Rate				94.00%

Source: Processed data, 2025

Table 10 shows the total level of conformity of perception and expectation on Information Quality is 94.00%. The highest value is in the statement "The IBOSS system provides ease in understanding information" which is 96.01%. The lowest value is in the statement "The IBOSS system provides accurate information" which is 91.56%. From the

results, the value is less than 100% is stated as not good or not in accordance with user expectations. Based on the results of interviews with IBOSS users related to statements with low values, the IBOSS system has several shortcomings:

1) There is no automatic verification feature or mechanism to ensure that the data entered by the user is correct before entering the processing stage.

Table 11. Results of Service Interaction Quality Conformity Level Analysis

No	Statement	Perception (X)	Expectations (Y)	Tki
		Total	Total	
16	IBOSS system has a good reputation	340	370	91.89%
17	I feel safe to interact with the IBOSS system	339	375	90.4%
18	I feel my personal information is safe on the IBOSS system	335	373	89.81%
19	The IBOSS system provides room for personalization	335	372	90.05%
20	I always get notifications regarding the process of submitting the licensing documents that I have submitted	343	373	91.98%
21	I feel the IBOSS system responds according to what I do	371	370	100.27 %
Total Conformity Rate				92.4%

Source: Processed data, 2025

Table 11 shows the total level of conformity of perception and expectation on Service Interaction Quality is 92.4%. The highest value is in the statement "I feel the IBOSS system provides responses according to what I do" which is 100.27%. The lowest value is in the statement "I feel personal information is safe on the IBOSS system" which is 89.81%. From the results, the value is less than 100% is stated as not good or not in accordance with user expectations. Based on the results of interviews with IBOSS users related to statements with low values, the IBOSS system has several shortcomings:

1) There is no two-factor authentication (2FA) feature and user login history, making users feel like their data is vulnerable to misuse.
2) There is no notification feature for suspicious activity logged into a user account.

Gap Analysis

Gap value ≥ 0 indicates a good level of system quality. Gap value ≤ 0 indicates a level of system quality that does not meet user desires. (Siti Fatmala & Rachmadi, 2018).

Table 12. Results of Usability Quality Gap Analysis

No	Statement	Perception (X)	Expectations (Y)	Gap
		Average	Average	
1	I feel the IBOSS system has an attractive appearance	3.46	3.69	-0.23
2	I feel the design of the IBOSS system suits the type of system	3.59	3.68	-0.09
3	I found it easy to navigate the IBOSS system	3.46	3.68	-0.22
4	I found it easy to learn how to operate the IBOSS system	3.51	3.72	-0.21
5	I find it easy to interact with the IBOSS system	3.52	3.66	-0.14

No	Statement	Perception (X)	Expectations (Y)	Gap
		Average	Average	
6	I find the IBOSS system easy to use	3.51	3.75	-0.24
7	I feel the IBOSS system is accessible at all times	3.65	3.8	-0.15
8	I feel the IBOSS system creates a positive experience for users	3.56	3.72	-0.16
Average		3.53	3.71	-0.18

Source: Processed data, 2025

Table 12 shows the gap value of perception and expectation on Usability Quality is -0.18. The highest value is in the statement "I feel the design of the IBOSS system is in accordance with the type of system" which is -0.09. Although the design is considered adequate, users expect more intuitive features that facilitate access to important information.

The lowest value is in the statement "I feel the IBOSS system is easy to use" which is -0.24. This gap reflects that users have difficulty using the system, which is caused by a complex interface, unclear navigation, or bugs that disrupt the workflow. The causal factor for the lowest score is the unintuitive interface display, such as unclear navigation, users having difficulty finding important menus or features.

Table 13. Results of Information Quality Gap Analysis

No	Statement	Perception (X)	Expectations (Y)	Gap
		Average	Average	
9	The IBOSS system provides relevant information	3.51	3.76	-0.25
10	The IBOSS system provides ease in understanding information	3.61	3.76	-0.15
11	The IBOSS system provides relevant information with precise details	3.55	3.76	-0.21
12	The IBOSS system provides information in the correct format	3.59	3.77	-0.18
13	The IBOSS system provides accurate information	3.47	3.79	-0.32
14	The IBOSS system provides reliable information	3.54	3.78	-0.24
15	The IBOSS system provides up to date information	3.61	3.85	-0.24
Average		3.55	3.78	-0.23

Source: Processed data, 2025

Table 13 shows the value of the perception and expectation gap in Information Quality is -0.23. The highest value is in the statement "The IBOSS system provides ease in understanding information" which is -0.15. Although there are indications that the information is presented in a fairly good way, users expect interactive features that make the information easier to digest.

The lowest value is in the statement "The IBOSS system provides accurate information" which is -0.32. Users are dissatisfied with the quality of the information, which can be caused by errors in the data, lack of updates, and irrelevant information. The causal factor for the lowest value is that the data is not synchronized between IBOSS and the Ministry/Institution system, which causes data errors such as the permit status

not being updated even though it has been completed.

Table 14. Results of Service Interaction Quality Gap Analysis

No	Statement	Perception (X)	Expectations (Y)	Gap
		Average	Average	
16	IBOSS system has a good reputation	3.4	3.7	-0.3
17	I feel safe to interact with the IBOSS system	3.39	3.75	-0.36
18	I feel my personal information is safe on the IBOSS system	3.35	3.73	-0.38
19	The IBOSS system provides room for personalization	3.35	3.72	-0.37
20	I always get notifications regarding the process of submitting the licensing documents that I have submitted	3.43	3.73	-0.3
21	I feel the IBOSS system responds according to what I do	3.71	3.7	0.01
Average		3.43	3.72	-0.28

Source: Processed data, 2025

Table 14 shows the value of the perception and expectation gap in Service Interaction Quality is -0.28. The highest value is in the statement "I feel the IBOSS system provides a response according to what I do" which is 0.01. Although this value is positive, it shows that there is a little satisfaction, but user expectations are still not met. Users want a faster response in the system.

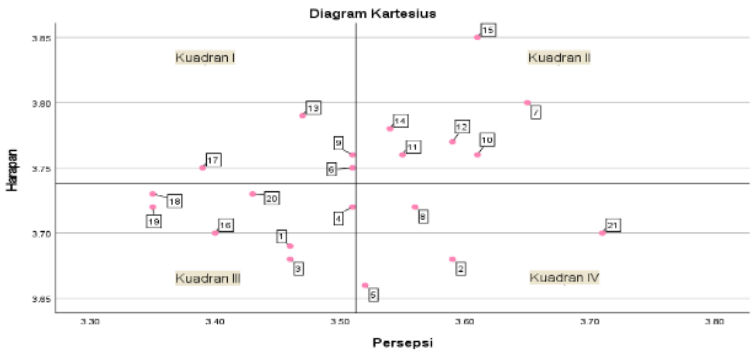
The lowest value is in the statement "I feel personal information is safe in the IBOSS system" which is -0.38. This dissatisfaction is caused by the lack of transparency about how personal information is managed. The causal factor for the lowest value is a weak firewall or network protection, causing users to sometimes fail to log in or data to feel "unsafe".

From the results of the three dimensions, having a value ≤ 0 indicates that the system quality level does not meet user desires.

Quadrant Analysis

The IPA results map each statement into a quadrant using a Cartesian diagram to identify priority areas, as follows.

Figure 6. Cartesian Diagram of Importance Performance Analysis



Source: Processed data, 2025

Figure 6 shows the mapping results based on the webqual method and quadrant analysis of the importance performance analysis method.

a. Quadrant I shows the importance of the indicator for users, but the performance on the system is low. So the system performance needs to be improved. Statements that fall into quadrant I are 6, 9, 13, 17.

Table 15. Quadrant I Statements

No	Statement
Usability Quality	
6	I find the IBOSS system easy to use.
Information Quality	
9	The IBOSS system provides relevant information
13	The IBOSS system provides accurate information
Service Interaction Quality	
17	I feel safe to interact with the IBOSS system

Source: Processed data, 2025

Based on the analysis of secondary data on the constraints of the 2024 IBOSS system with quadrant I results that require improvement, there is a relationship between the data and the results:

1) I find the IBOSS system easy to use (Statement 6)
   a. Application bugs or data validation errors
   b. User data update error during registration
   c. Information is not saved or user profile menu is difficult to access
   d. Transaction failed or payment status not confirmed in the payment system with the bank
2) The IBOSS system provides relevant information (Statement 9)
   a. Report failed to upload or file format is not supported in realization report
   b. Data synchronization failure with Ministry/Institution application
3) The IBOSS system provides accurate information (Statement 13)
   a. Application bug causing data to be inaccurate
   b. Registration errors resulting in inaccurate data
4) I feel safe to interact with the IBOSS system (Statement 17)
   a. Digital signature verification failure or document format is incorrect
   b. User or system access is blocked by network security (firewall)
   c. Internet disruptions resulting in slow or failed access

b. Quadrant II shows the importance of the indicator for users and the performance of the system is running well. So the indicators that enter quadrant II need to be maintained. Statements that enter quadrant II are 7, 10, 11, 12, 14, 15.

Table 16. Quadrant II Statements

No	Statement
Usability Quality	
7	I feel the IBOSS system is accessible at all times
Information Quality	
10	The IBOSS system provides ease in understanding information
11	The IBOSS system provides relevant information with precise details

No	Statement
12	The IBOSS system provides information in the correct format
14	The IBOSS system provides reliable information
15	The IBOSS system provides up to date information

Source: Processed data, 2025

c. Quadrant III shows the unimportance of the indicator for users and its performance is also low for users. So it is not really necessary to make improvements. Statements that fall into quadrant III are 1, 3, 4, 16, 18, 19, 20.

Table 17. Quadrant III Statements

No	Statement
Usability Quality	
1	I feel the IBOSS system has an attractive appearance
3	I found it easy to navigate within the IBOSS system
4	I found it easy to learn how to operate the IBOSS system
Service Interaction Quality	
16	IBOSS system has a good reputation
18	I feel my personal information is safe on the IBOSS system
19	The IBOSS system provides room for personalization
20	I always get notifications regarding the process of submitting the licensing documents that I have submitted

Source: Processed data, 2025

d. Quadrant IV shows excessive performance but low level of importance for users. So that the quality of performance on the indicator can be diverted to aspects that need more improvement. Statements that fall into quadrant IV are 2, 5, 8, 21.

Table 18. Quadrant IV Statements

No	Statement
Usability Quality	
2	I feel the design of the IBOSS system suits the type of system
5	I find it easy to interact with the IBOSS system
8	I feel the IBOSS system creates a positive experience for users
Service Interaction Quality	
21	I feel the IBOSS system responds according to what I do

Source: Processed data, 2025

Discussion

The usability dimension shows a conformity level of 95.15% but a negative gap of -0.18, indicating a mismatch between user expectations and actual experience. This aligns with (Rerung & Ramadhan, 2024), who emphasized that usability significantly impacts user comfort and ease of navigation in digital systems.

Information quality, with a conformity of 94.00% and a gap of -0.23, reflects issues in data accuracy and updating—especially in the accuracy indicator (-0.32). (Donie et al., 2019) support this, noting that unreliable information in public systems reduces user trust and decision quality.

Service interaction quality scored the lowest 92.4% and gap -0.28, particularly due to lack of security features, echoing findings by (Rokhman et al., 2024), who stress the role of trust and data protection in user satisfaction.

Here are the findings from the two studies using different methods related to the quality of the IBOSS system:

a. TAM found that ease of use affects satisfaction, and this is reinforced by the WebQual results where Usability has a large gap and is a major concern.

b. Perceived Usefulness in TAM is not significant to satisfaction, and this is also supported by the IPA results which show that attributes such as relevance and accuracy of information are not yet satisfactory.
c. Attitude towards use in TAM turns out to affect satisfaction. This is in accordance with the WebQual results where user experience (good or bad) towards system interactions affects their overall satisfaction.

CONCLUSION

The results of the Importance Performance Analysis show that there are several indicators that fall into Quadrant I, namely indicators that are considered very important by users but their performance is still low. These indicators include ease of use of the system, relevance and accuracy of information, and security of interaction. Meanwhile, there are also indicators that have large gap values but do not fall into Quadrant I, because their level of importance is considered lower by users.

Large gap indicators but not included in quadrant 1 are:

1) Statement 18: Personal data security (Gap -0.38), included in quadrant III
2) Statement 19: Personalization space (Gap -0.37), included in quadrant III
3) Statement 16: Website reputation (Gap -0.30), included in quadrant III
4) Statement 15: Latest information (Gap -0.24), included in quadrant II
5) Statement 14: Output reliability (Gap -0.24), included in quadrant II

These indicators, although showing a large gap, are not prioritized by users compared to others.

From the results of previous research using the TAM method and the results of my research using the WEBQUAL and IPA methods, it was found that consistency:

1) The statement of quadrant I, namely "The IBOSS system is easy to use" is in line with the results of previous research which showed that the perception of ease does not significantly influence attitudes, because the aspect of ease in the field is not optimal.
2) The next statement, namely "The IBOSS system provides relevant and accurate information" is in line with the results of previous research which showed that the perception of usefulness does not significantly influence user satisfaction, indicating that although the system has useful features by design, its implementation is still problematic.

SUGGESTION

IBOSS managers need to improve the quality of the system in quadrant I aspects.

Table 19. IBOSS System Recommendations

No Attribute	Problem	Recommendation
6	Application bug or data validation error	Create automatic checks when users fill out forms to catch data errors before they are submitted.
	User data update error during registration	Save a history of user data changes, so that if there is a mistake, it can be seen and corrected easily.
	Information is not saved or profile menu is difficult to access	Speed up access to user data by improving its data storage structure.
	Transaction failed or payment status not confirmed with bank	Send notification via email or IBOSS application immediately after successful payment.
9	Report failed to upload or file format is not supported	Increase the maximum file size that can be uploaded, or display file size limit information clearly.

No Attribute	Problem	Recommendation
	Data synchronization failure with Ministry/Institution application	Create a synchronous backup system so that the latest data can still be accessed in the event of a failure.
13	Application bug causing data to be inaccurate	Fix the program code, especially the parts that handle data input and storage, so that there are no errors when data is sent or stored.
	Registration disruptions resulting in inaccurate data	Improve the registration process with an auto-save feature when the connection is lost.
17	Digital signature verification failure or document format is incorrect	Set automatic validation before upload, the system checks whether the digital signature is active and valid before the document is accepted.
	User or system access is blocked by network security (firewall)	Improve adaptive firewall management, so that the firewall can distinguish between malicious traffic and normal user traffic.
	Internet disruptions resulting in slow or failed access	Create an automatic auto-retry system, so that if the connection fails for a moment, the system automatically tries again without the user having to manually restart.

Source: Processed data, 2025

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