

## Research Article

# Usability Analysis of The Website of The Housing and Settlement Area Office of The District of South Bengkulu

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**Abstract:** The Bengkulu Selatan Regency Government has developed e-government by providing various information channels through websites throughout the Regional Apparatus Organizations (OPD), in this case, the Housing and Settlement Service. Usability assessment is needed to support further development and determine the value of the benefits of e-government to meet the community's needs. There are 4 aspects evaluated in this study, namely 4 aspects: usability, System Usefulness, Information Quality, Interface Quality, and Overall. This study uses the Post Study System Usability Questionnaire (PSSUQ) method, namely a questionnaire used to assess a system or to determine the extent of user experience to get a comprehensive impression of the user experience or end user of a system with a case study of the website of the Housing and Settlement Service of Bengkulu Selatan Regency. The results of the website usability research obtained the Usefulness aspect value (System Usefulness) with an average value of 2.26, the Information Quality aspect (Information Quality) with a value of 2.03, and Interface Quality (Interface Quality) with an average value of 1.91 and Overall (Overall) with a value of 2.11 where the lower limit of the PSSUQ norm is 2.62.



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**Keywords:** Usability; PSSUQ; E-Government; Information Quality; Interface Quality

## 1. Introduction

In developing countries such as Indonesia, many urban and regional elements must be continuously addressed. One of the pressing problems present in developing countries is housing and settlement issues. Law of the Republic of Indonesia Number 1 of 2011 concerning Housing and Settlement Areas is a settlement that is not livable due to building irregularities. These problems must be addressed quickly because, according to data on population growth, regions in Indonesia continue to experience an increase in population density, such as in South Bengkulu Regency in 2020, reaching 166,249 people, while in 2010, reaching 142,940 people. Population growth occurs yearly, with an annual growth rate of 1.47 percent. The population density per km<sup>2</sup> in 2020 was recorded at 140. The local Housing and Settlement Area Office seeks to create a climate of collaboration and community participation to prevent larger problems from arising and impacting the environment in the area (Nasution, 2019). Websites, as the most commonly used media for implementing public information disclosure (KIP), still need to provide the information needed by the public fully, and there is no way to measure KIP performance on websites (Firdaus, 2017).

Previous research has been conducted related to usability analysis on the Peduli Lindungi Application as an information application and Tracking COVID-19 with Heuristic Evaluation; the results showed that the recommendations for improvement provided include comments by application users on application provider services that need developer attention, the appearance of the interface design is good but can be improved by making additional slight variations in color and consistency in the use of

buttons and links, error handling gets much attention from testers, especially in the use of notifications that are less simple and do not provide information on error handling that must be done (Sudiarsa & Wiraditya, 2020). The next research was carried out usability testing analysis using the Post Study System Usability Questionnaire (PSSUQ) method at Mikroskil University digital library. PSSUQ method. The result of this study is that the Mikroskil University Digital Library provides information, display, and satisfaction and can be said to have an overall positive response from respondents (Suwandy et al., 2022).

## 2. Method

Based on the problem of public information disclosure presented by the Housing and Settlement Area Office of South Bengkulu Regency, it is necessary to analyze usability using the post-study system usability questionnaire method to get and know the extent to which users can get a comprehensive impression of the experience of exploring and utilizing features on the website until the final process and then conclusions will be drawn on measurements with the PSSUQ method.

Based on the problem of public information disclosure presented by the Housing and Settlement Area Office of South Bengkulu Regency, it is necessary to analyze usability using the post-study system usability questionnaire method to obtain and find out the extent to which users can get a comprehensive impression of the experience of exploring and utilizing features on the website until the final process and then conclusions will be drawn on measurements with the PSSUQ method.

### 2.1 Research Questions

The research questions are as follows:

1. How is the comprehensive impression of user experience on the website of the Housing and Settlement Area Office of South Bengkulu Regency using the PSSUQ method?
2. What are the results of evaluating website usability through four aspects, namely System Usefulness, Information Quality, Interface Quality, and Overall?

### 2.2 Research Objectives

1. Knowing the comprehensive impression of users on the website of the Housing and Settlement Area Agency of South Bengkulu Regency
2. Produce information on the evaluation of e-government usability with a case study of the South Bengkulu Regency Housing and Settlement Area Agency website 1.4. Research Framework Researchers compiled a research framework to facilitate the work and scheduling of research. In previous studies, usability testing of the Nagari Mobile Banking application was carried out. The usability testing method is carried out to evaluate applications based on user perceptions. The USE questionnaire has 4 factors: Usefulness, Ease of Learning, and Satisfaction. This factor is used as an independent variable. Furthermore, the study used validity and reliability tests, normality tests, and multiple regression analysis as data analysis methods. The results of this study indicate that 4 USE variables are significant in the usability of the Nagari Mobile Banking application (Kasih & Delianti, 2020). A post-study system usability questionnaire (PSSUQ) is a method that measures user satisfaction with applications (Putra et al., 2020). PSSUQ was originally an internal IBM project known as System Usability Metrics (SUMS) and headed by Suzanne Henry. A total of 18 questions became the first version of the PSSUQ (Lewis, 1992).

## 3. Result and Discussion

### 3.1 Use PSSUQ Norms

Implementation and Trial From the results of the research implementation, it can be seen that the implementation of the PSSUQ method analysis on the questionnaire that a total of 100 respondents filled in is as follows:

1. SysUse Scale The SysUse scale consists of questions 1 through 6, so the calculation is done by adding up the scores from 6 questions, then the amount will be divided by 6 according to the number of SysUse scale questions:

2. The results of the usability analysis of the System Usefulness aspect, then based on table 2.1 PSSUQ norms, include the usability level of the Housing and Settlement Area Service website in the System Usefulness aspect in the not good category because it gets the average value of the sys use sub-scale smaller than the average value of the lower limit on the PSSUQ norm as a Table 1.

**Table 1.** PSSUQ Norms

No	Question	Lower Limit	Mean	Upper Limit
1	<i>Overall, I am satisfied with the ease of using this website</i>	2,60	2,85	3,09
2	<i>It very easy to use this website</i>	2,45	2,69	2,93
3	<i>I can complete tasks and scenarios quickly using this website.</i>	2,86	3,16	3,45
4	<i>I feel comfortable using this website.</i>	2,40	2,66	2,91
5	<i>Very easy to learn using this website</i>	2,07	2,27	2,48
6	<i>I believe I can become productive quickly using this website.</i>	2,54	2,86	3,17
7	<i>The website provides clear error messages that let me know how to fix the problem</i>	3,36	3,70	4,05
8	<i>Whenever I make a mistake in using the website, I can recover it easily and quickly.</i>	2,93	3,21	3,49
9	<i>The information (such as online help, on-screen messages, and other documentation) included with this website is clear.</i>	2,65	2,96	3,27
10	<i>It was easy to find the information I needed</i>	2,79	3,09	3,38
11	<i>The information is effective in helping me complete tasks and scenarios.</i>	2,46	2,74	3,01
12	<i>The organization of information on the website screen is clear.</i>	2,41	2,66	2,92
13	<i>The system interface is pleasant.</i>	2,06	2,28	2,49
14	<i>I like using this system interface.</i>	2,18	2,42	2,66
15	<i>This website has all the functions and capabilities that I wish it had.</i>	2,51	2,79	3,07
16	<i>Overall, I am satisfied with this website.</i>	2,55	2,82	3,09
<b>Scale</b>	Scale Scoring Rules			
<b>SysUse</b>	Average of question items 1-6	2,57	2,80	3,62
<b>InfoQual</b>	Average of question items 7-12	2,79	3,02	3,24
<b>InterQual</b>	Average of question items 13-16	2,28	2,49	2,71
<b>Overall</b>	Average of question items 1-16	2,62	2,82	3,02

3. InfoQual Scale InfoQual consists of questions 7 through 12. The calculation is done by adding up the scores from 6 questions, and then the amount will be divided by 6 according to the number of InfoQual scale questions.
4. The results of the usability analysis of the Information Quality aspect, are then based on Table 1. PSSUQ norms, the usability level of the Housing and Settlement Area Service website in the Information Quality aspect is included in the not good category because it gets the average value of the info qual sub-scale smaller than the average value of the lower limit on the PSSUQ norm.
5. InterQual The InterQual scale consists of questions 13 through question 16, so the calculation is done by adding up the scores from 4 questions. The amount will be divided by 4 according to the number of InterQual scale questions.
6. Interface Quality aspect usability analysis results, based on Table 1 PSSUQ norms, the usability level of the Housing and Settlement Area Service website in the interface quality aspect is included in the not good category because it gets the average value of the interqual sub-scale smaller than the average value of the lower limit on the PSSUQ norm. 6.

7. Overall, The overall scale consists of questions 1 through 16, so the calculation is done by adding up the scores from 16 questions. The amount will be divided by 16 according to the number of overall scale questions. Based on the conclusions obtained from the overall sub-scale results.
8. Overall aspect usability analysis results Then, based on Table 1 PSSUQ Norms, the usability level of the Housing and Settlement Area Service website in the overall aspect is included in the not good category because it gets the average value of the overall sub-scale smaller than the average value of the lower limit on the PSSUQ norm.

### 3.2 Testing

Reliability testing will then be carried out to measure the consistency of the questionnaire, which is an indicator of the research variable. In this test, tools on SPSS software are used. The input data is taken from respondents' answers to the 16 questions. The results of the reliability test can be seen in Table 2.

**Table 2.** Reliability Test Result of Questionnaire

Questions	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Question1	31.21	60.087	.417	.909
Question2	31.63	54.660	.749	.897
Question3	31.29	58.289	.715	.899
Question4	31.29	58.895	.638	.901
Question5	31.51	57.525	.668	.900
Question6	31.68	58.321	.567	.904
Question7	32.18	58.129	.524	.905
Question8	31.77	55.553	.701	.899
Question9	31.37	58.700	.713	.900
Question10	31.32	59.897	.606	.903
Question11	31.59	57.962	.696	.900
Question12	31.67	60.143	.508	.905
Question13	32.16	57.934	.532	.905
Question14	31.75	55.341	.716	.898
Question15	31.37	58.700	.713	.900
Question16	31.41	66.204	-.036	.917

All questionnaire questions are reliable or consistent with the above results because Cronbach's Alpha value is  $> 0.60$  ( $0.908 > 0.60$ ). Thus, the questionnaire used for data collection is consistent or stable.

### 3.3 Discussion

Researchers carried out tests online using Google Forms media, recording, and processing data obtained from 100 sample respondents. The results of the usability level analysis of four aspects can be seen in Table 3.

**Table 3.** The results of the usability level analysis

Scale	Scale Scoring Rules	Lower Limit	Mean	Upper Limit	Average Respondent Data	Rated
SysUse	Average of question items 1-6	2,57	2,80	3,62	2,26	Not Good
InfoQual	Average of question items 7-12	2,79	3,02	3,24	2,03	Not Good
InterQual	Average of question items 13-16	2,28	2,49	2,71	1,91	Not Good
Overall	Average of question items 1-16	2,62	2,82	3,02	2,11	Not Good

Based on Table 3, it can be seen that the value of the website's usability of the South Bengkulu Regency Housing and Settlement Area Office is still in the not good category, meaning that it still needs much improvement in these 4 aspects, namely 1. System Usability: users still need a long time to learn from the objectives and do not find features that can help users complete their work. 2.

Information Quality, namely the organization of information on the website, needs to be clarified: no notification on error messages to inform users of errors that occur. 3. Interface Quality, namely not interactive in terms of screen design, so that users feel stiff with the website interface. 4. Overall, namely features that are not available and information that is not well managed so that news or articles on the website are not published regularly.

## 5. Conclusion

Based on the results of the analysis and discussion above, the authors obtain conclusions that can answer the research questions from the results of the usability analysis of the website of the Housing and Settlement Area Office of South Bengkulu Regency as follows: 1. The comprehensive impression of user experience on the South Bengkulu Regency Housing and Settlement Area Office website using the PSSUQ method could be better. This result is evidenced by the data processing results of 100 sample respondents in 4 aspects of usability, namely system usability, information quality, interface quality, and overall value smaller than the lower limit of the PSSUQ Norm. Furthermore, the reliability test results of all questionnaire questions are reliable or consistent due to the Cronbach's Alpha value  $> 0.60$  ( $0.908 > 0.60$ ). 2. The results of the website usability evaluation through four aspects, namely System Usefulness with an average value of 2.26 where the lower limit of the PSSUQ norm is 2.57, Information Quality with a value of 2.03 where the lower limit of the PSSUQ norm is 2.79 and Interface Quality with an average value of 1.91 where the lower limit of the PSSUQ norm is 2.28, and Overall with a value of 2.11 where the lower limit of the PSSUQ norm is 2.62. Then all aspects fall into the not good category.

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**Conflicts of Interest:** The authors declare no conflict of interest.

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