

ASSESSING USER EXPERIENCE OF SITURAWA GEDE TOURISM WEBSITE USING PSSUQ AND HEURISTIC

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Abstract— The Siturawagede platform is an information site built to support services, promotions, and interactions with the public. Therefore, the quality of the user experience (UX) is a crucial factor in ensuring the site's effective, efficient, and satisfying use. This study aims to analyze the user experience of the Siturawagede website, measure user satisfaction with ease of use, efficiency, and information quality using the Post-Study System Usability Questionnaire (PSSUQ), assess the site's compliance with Nielsen's usability principles through a heuristic evaluation, and provide recommendations for improving the site's user-friendliness. The study involved 100 respondents who completed the PSSUQ questionnaire and three expert evaluators who conducted the heuristic assessment. The results showed that the average PSSUQ score of 2.6 was categorized as "good." This is based on the PSSUQ 1–7 scale, where a score closer to 1 indicates a positive experience (Strongly Agree) and a score closer to 7 indicates a negative experience (Strongly Disagree), indicating that users were quite satisfied with the system. The heuristic evaluation obtained a score of 1.49, identifying several minor navigation issues, but the system was generally good and needed only minor improvements. These findings provide guidance for improving the quality of the Siturawagede website to make it more informative and optimal in supporting tourism management.

Keywords: Heuristic Evaluation, PSSUQ, Siturawagede, Usability, User Experience

Intisari— Platform siturawagede merupakan situs informasi yang dibangun untuk mendukung pelayanan, promosi, dan interaksi dengan masyarakat, sehingga kualitas pengalaman pengguna (user experience) menjadi faktor penting agar situs dapat digunakan secara efektif, efisien, dan memuaskan. Penelitian ini bertujuan untuk mengevaluasi pengalaman pengguna situs web siturawagede, mengukur tingkat kepuasan pengguna terhadap kemudahan penggunaan, efisiensi, dan kualitas informasi menggunakan metode post-study system usability questionnaire (pssuq), menilai kesesuaian situs dengan prinsip-prinsip kegunaan Nielsen melalui heuristic evaluation, serta memberikan rekomendasi pengembangan agar situs lebih ramah pengguna. Penelitian melibatkan 100 responden untuk pengisian kuesioner pssuq dan tiga evaluator ahli untuk melakukan penilaian heuristik. Hasil penelitian menunjukkan bahwa nilai rata-rata pssuq sebesar 2,6 termasuk kategori "baik", menandakan pengguna cukup puas terhadap sistem, sedangkan hasil evaluasi heuristik memperoleh skor 1,49 yang mengidentifikasi beberapa permasalahan minor pada navigasi namun secara umum sistem sudah baik dan hanya memerlukan sedikit penyempurnaan. temuan ini memberikan arahan untuk peningkatan kualitas situs siturawagede agar lebih informatif dan optimal dalam mendukung pengelolaan wisata

Kata Kunci: Evaluasi heuristik, PSSUQ, Siturawagede, Kegunaan, Pengalaman Pengguna

INTRODUCTION

User experience, or UX, plays a crucial role in the success of websites and apps, especially those offering public services like government or community portals [1][2]. A good user experience helps users access services more easily, makes them happy with the service, and makes them want to use it again, which shows why it's important to design digital services around what users need [3][4]. Good user experience is really important for websites that provide public services, like government or community sites [5]. Even though more digital tourism websites are being created by governments and local groups, there's not much research looking at the specific problems users face when using these sites [6] [7]. Many of these websites still have issues like hard-to-use menus, not enough clear information, and not enough people using them [8]. Which makes it harder to promote and manage tourism effectively. This shows there's a need to properly study the user experience on these platforms, which is why this study is new and important[9]. One of the most common ways to check user experience is through the Post-Study System Usability Questionnaire, or PSSUQ, which was made by IBM. The PSSUQ is a tool that uses 16 questions to find out how satisfied users are with a system. It looks at three areas: how easy the system is to use, how good the information is, and how well the website is designed [10].

Heuristic Evaluation (HE) is a qualitative approach that follows Nielsen's ten principles [11], and it is carried out by experts to find usability problems. It is both efficient and affordable, which makes it a good choice for use in the early stages of development. Recent research in areas like mobile banking [12], public service systems, and digital health has shown that HE is effective at uncovering design flaws and helping to improve the user experience, supporting its use as a modern way to evaluate interfaces [13][14].

The Siturawagede website serves as a digital platform for promoting tourism in Rawa Gede, which makes evaluating the user experience important. This study uses the PSSUQ method to assess user satisfaction and applies Heuristic Evaluation to spot usability issues. Together, these methods offer a complete understanding of usability, information quality, and interface quality. User Experience (UX) is about how users feel, their satisfaction, and how well they can interact with a system [15]. The PSSUQ is a way to measure how easy a system is to use, using a survey. It was created by James R. Lewis from IBM in the early 1990s. At first, it was used to test IBM software, and

it was first shared in 1992. Later, it was tested again in 1995 and 2002 to make sure it worked well [16]. Heuristic Evaluation is another way to check usability, introduced by Jakob Nielsen and Rolf Molich around the same time. This method uses a group of experts (usually 3 to 5 people) to look at a system's design based on specific rules. They don't need users to take part, just check the system against guidelines to find problems [17]. Studies have shown that PSSUQ is a good tool for measuring user experience. A review by Vlachogianni and Tselios in 2023 looked at 42 studies and found that PSSUQ is a reliable way to assess usability in educational technology. The results of PSSUQ can change based on the system and the users using it, so it's important to look at the situation when analyzing the results [18]. Research [19] shows that the lower the score on PSSUQ, the better the system is for users. So, the SITTA web app is considered to be quite good because it meets user needs and is useful. A study [20] using PSSUQ to check the mindline.sg platform found that the average usability score was 2.86 (with a standard deviation of 1.46). More details include system usefulness at 2.74 (SD 1.46), information quality at 2.98 (SD 1.33), and interface quality at 2.98 (SD 1.33). All of these scores are high according to the PSSUQ rating system. A good user interface is important because it helps make digital systems work better and faster.

The aim of this study is to assess the user experience on the Siturawagede website, which serves as a platform for promoting and managing tourism, by using the Post-Study System Usability Questionnaire (PSSUQ) to measure user satisfaction in a quantitative way, and Heuristic Evaluation to find usability issues in a qualitative manner. This study seeks to offer suggestions for improving the website's interface, which can help enhance the quality of digital tourism services. By focusing on the user experience challenges faced by tourism-related government and community portals, this research addresses a gap that has not been thoroughly explored in the existing literature [17][18][20], and adds valuable insights into effective design approaches for digital tourism platforms.

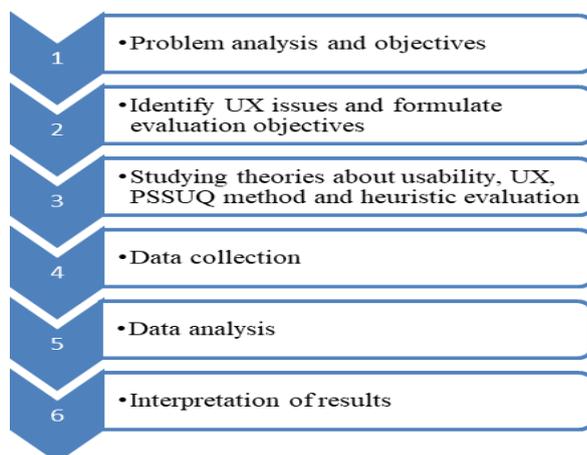
The goal of this study is to examine how users experience the Siturawagede website, which serves as a platform for promoting and managing tourism. It uses the Post-Study System Usability Questionnaire (PSSUQ) to measure user satisfaction in a numerical way, and Heuristic Evaluation to find usability issues in a more detailed manner. This helps in suggesting improvements to the website's interface that can enhance the quality of digital tourism services. By focusing on user experience challenges within government and community-based tourism portals, this study addresses a gap in existing research

[17][18][20], offering new ideas on how to design more effective digital tourism platforms

The novelty of this study lies in the combined application of the Post-Study System Usability Questionnaire (PSSUQ) and Heuristic Evaluation (HE) methods to evaluate the user experience on the Siturawagede tourism promotion and management website. This approach has not been widely used in an integrated manner in the context of tourism digitalization, thus providing a new contribution in identifying usability aspects quantitatively and qualitatively.

MATERIALS AND METHODS

This study uses a combination of two evaluation methods—Post-Study System Usability Questionnaire (PSSUQ) and Heuristic Evaluation—to examine the user experience on the Siturawagede website, which is a platform for promoting and managing village tourism. The PSSUQ was used to measure how satisfied users are with the website, while Heuristic Evaluation helped spot design problems from the viewpoint of experts. These methods were picked because they are dependable and useful for checking usability early on. However, the research also plans to include other user experience evaluation techniques like cognitive walkthroughs, task-based testing, and clickstream analysis in the future. This will help gather more varied insights and give a better overall picture of how users experience the website. The research stages are as follows:



Source: (Research results, 2024)

Figure 1: Research Stages

Problem Analysis and Objectives

In this stage, the team looks at the issues with the Siturawagede website, which was built to help with promotion and managing tourism. The check will cover how easy the website is to use, how happy

users are with it, and whether the design follows good UX principles.

Identifying UX Issues and Formulating Evaluation Objectives

At this point, some UX problems on the Siturawagede website were found, such as how easy it is to navigate, how content is shown, how well it works on different devices, how information is presented, and how the system responds to user actions. The goals of the evaluation were then set: to check how well the website's navigation and design help share tourism information, to suggest UX improvements that fit user needs and tourism goals, to measure user satisfaction using the PSSUQ tool, and to find usability issues using the Heuristic Evaluation method.

Studying theories on usability, UX, the PSSUQ method, and heuristic evaluation

At this stage, researchers studied literature from various scientific sources and related reference journals to understand the concepts of usability and user experience (UX) as a basis for evaluating the Siturawagede website. Usability refers to the extent to which a system can be used by users to achieve goals effectively, efficiently, and satisfactorily. To measure this quantitatively, the Post-Study System Usability Questionnaire (PSSUQ) method was used, which assesses user satisfaction with the system after use. Furthermore, a Heuristic Evaluation approach was used to qualitatively assess the interface based on Jakob Nielsen's 10 heuristic principles.

Data Collection

Data collection took place in two parts. The first part included giving participants the PSSUQ questionnaire after they had finished a set of tasks on the website, such as looking up travel details, making bookings, and using interactive tools. A total of 100 people took part in the study, with 52 being men and 48 being women. Their ages ranged from 18 to 57 years. Looking at how old the participants were, 28% were aged 18 to 25, 32% were 26 to 35, 25% were 36 to 45, and 15% were 46 to 57.

Table 1. Respondents' Demographic Characteristics

Kategori	Subkategori	Total	Percentage (%)
Gender	Man	52	52%
	Woman	48	48%
Age group	18-25 years old	28	28%
	26-35 years old	32	32%
	36-45 years old	25	25%
	46-57 years old	15	15%
Total Respondents		100	100%

Source: (Research Results, 2024)

The PSSUQ tool had 16 questions with a rating scale from 1 to 7. It was used to measure how satisfied users were with the system, and the results were analyzed using basic statistical methods. In the second part, three experts in user experience and human-computer interaction did a heuristic evaluation. They checked the website's design to find problems with how easy it was to use. They also rated how serious each issue was on a scale from 0 to 4. Instruments and assessment scales are summarized in the following tables.

Table 2. PSSUQ Evaluation Indicators

No	Evaluation Dimensions	Valuation Statement
1	System Usefulness	The system helps me complete tasks effectively. The system provides accurate information. I feel comfortable using the system. The system enables me to complete tasks efficiently.
2	Information Quality	The system increases my productivity. I am satisfied with the system overall. The information provided by the system is easy to understand. The information provided is sufficient to support my needs.
3	Interface Quality	The information is presented in a clear and easy-to-understand manner. The information provided by the system helps me make decisions. The system interface is pleasant to use. The system interface looks professional.
4	Overall Satisfaction	The system interface is consistent and easy to navigate. I am generally satisfied with the system. I am willing to recommend the system to other users. I am willing to use the system again in the future.

Source: (Research Results, 2024)

Each statement item is rated using a 7-point Likert scale, ranging from 1 (strongly agree) to 7 (strongly disagree). In this scoring scheme, a lower score indicates a higher level of user satisfaction with the system. Conversely, a higher score indicates a greater level of user dissatisfaction. The following table shows the Likert scale used.

Table 3. Likert Rating Scale on the PSSUQ Instrument

Skor	Interpretasi
1	Strongly Agree (highest level of satisfaction)
2	Agree
3	Somewhat Agree
4	Neutral / Don't Know
5	Somewhat Disagree

6	Disagree
7	Strongly Disagree (lowest level of satisfaction)

Source: (Valizadeh, 2023 [21])

Table 4. PSSUQ Evaluation Average Score Interpretation Category [22]

Skor	Interpretative Category	General Interpretation
1,00 – 1,79	Very Good	Users are very satisfied, the system is very easy and convenient to use.
1,80 – 2,59	Good	The system is quite good and meets user expectations with few comments.
2,60 – 3,39	Fair	The user experience is good but requires some minor improvements.
3,40 – 4,19	Average	The system is considered average and requires further evaluation.
4,20 – 4,99	Poor	Users experience difficulties, there are issues with the usability of the system.
5,00 – 7,00	Poor	The user experience is very poor, the system needs a complete overhaul.

Source: (Research Results, 2024)

Heuristic Evaluation.

This evaluation is used to identify user interface issues by evaluators using the ten heuristic principles developed by Nielsen. The following are the indicators for Nielsen's heuristic evaluation:

Table 5. Nielsen heuristic evaluation indicators

No	Heuristic Principles	Assessment Indicators
1	Visibility of System Status	The system provides immediate feedback. Process indicators (loading, notifications)
2	Match Between System and the Real World	Use familiar terms Order according to real-world logic
3	User Control and Freedom	Undo/redo available Can easily cancel or exit a process
4	Consistency and Standards	Consistency of icons, colors, and terms Follow common design conventions
5	Error Prevention	Input validation prevents errors Confirmation before important actions
6	Recognition Rather than Recall	Information is available, no need to remember Menus, visual instructions available
7	Flexibility and Efficiency of Use	Support for both expert and novice users Shortcuts and efficient navigation
8	Aesthetic and Minimalist Design	Antarmuka bersih dan ringkas No irrelevant elements
9	Help Users Recognize, Diagnose, and Recover from Errors	Error messages are clear and provide Error correction guides are available
10	Help and Documentation	Documentation or help is easily accessible Contextual and user-specific

Source : (Bantug, 2023 [23])



The evaluation process was conducted by three evaluators with backgrounds in interface design and user experience. Each evaluator independently assessed the interface elements of the tested website, noted any usability issues found, and categorized their severity based on the Nielsen severity scale (0–4), where 0 indicates no issues and 4 indicates critical usability issues that require immediate remediation. The following table shows the Nielsen Severity Heuristic scale.

Table 6. Severity Heuristik Nielsen

Score	Severity Level	Criteria
0	No Problem	Not considered a usability issue
1	Cosmetics	Minor issues that do not impact functionality; fixes are not urgent
2	Minor Usability Problem	Minor issues that should be fixed, but are not urgent
3	Major Usability Problem	Critical issues that have a significant impact; fixes are recommended immediately
4	Usability Catastrophe	Critical problem that could cause system failure; must be fixed immediately

Source : (Harun, 2023 [24])

Data Analysis

After the data was collected, it was analyzed to interpret the findings from the UX evaluation of the Siturawagede website. Quantitative data obtained from the PSSUQ questionnaire was analyzed by calculating the average score for each indicator to determine the level of user satisfaction numerically. Qualitative data from the Heuristic Evaluation was then analyzed by grouping the findings based on Jakob Nielsen's ten heuristic principles and identifying the severity rating of each usability issue.

Interpretation of Results

Based on the data analysis, the results will provide a comprehensive overview of the aspects that are good and those that still need improvement on the website, thus providing the basis for more targeted recommendations for UX improvements.

The study subjects consisted of 100 respondents who were potential and active website users, including local tourists and the general public who had accessed the site, as well as three evaluators with backgrounds in UI/UX and software engineering. Each evaluator was asked to conduct a system walkthrough and record any usability issues they encountered based on Nielsen's 10 heuristic principles.

RESULTS AND DISCUSSION

PSSUQ Evaluation Questionnaire Results

The following is a screenshot of the Siturawagede website, whose usability will be analyzed. The URL address is: <https://www.siturawagede-kppl.org/>



Source: (Research Results, 2024)

Figure 2. Appearance of the Siturawagede website

The results of the evaluation using PSSUQ using 16 questions from 100 respondents who used the Siturawagede website. The following are the results of the PSSUQ questionnaire, as shown in Table 6.

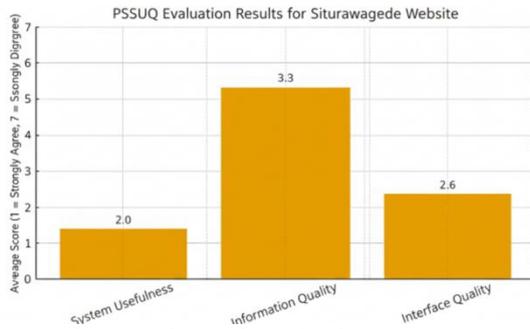
Table 7. Results of the PSSUQ questionnaire

Dimension	Number Items	of Average Score	Interpretation
System Usefulness (SU)	6	2	Good
Information Quality (IQ)	6	3,30	Quite Good
Interface Quality (IQF)	4	2,50	Good
Rata-rata Total	16	2,6	Good

Source: (Research results, 2024)

The PSSUQ results show that users are generally happy with the Siturawagede website, with an average score of 2.6, which is considered good. The best part of the system is how useful it is for completing tasks, with an average of 2.0. However, the part about the quality of the information scored the lowest, with an average of 3.3, which is quite good. This means users feel the information could be more accurate, clear, and detailed. This matches what Lewis (1995) said about how important information quality is for user satisfaction in PSSUQ studies. So, it's important to keep updating and improving the content to meet what users expect.





Source: (Research results, 2024)
 Figure 3. Results of PSSUQ Evaluation

This graph shows the average scores for the three areas measured by the Post-Study System Usability Questionnaire (PSSUQ). The results indicate that System Usefulness had a score of 2.0 (Good), Information Quality scored 3.3 (Quite Good), and Interface Quality scored 2.5 (Good). The overall average score was 2.6, which suggests that users were mostly satisfied with the system. The PSSUQ results were looked at using descriptive statistics to understand how satisfied users were. Even though tests like ANOVA or t-tests weren't used, the average scores still give a clear picture of what users think at this point in the system evaluation. It's recommended that future research include more detailed statistical methods, like confidence intervals or standard deviation, to make the findings more reliable and statistically sound.

Heuristic Results
 This evaluation was conducted based on Nielsen's usability principles, which encompass aspects of usability and user experience. Each principle was assessed by an evaluator. The results are as follows:

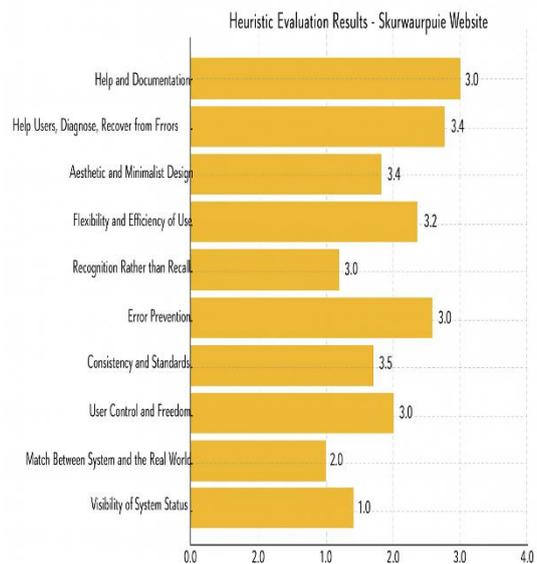
Table 8. Heuristic evaluator results

No	Prinsip Heuristik Nielsen	Skor Rata-rata	Catatan Evaluator
1	Visibility of System Status	1,2	System status is visible, but not very prominent.
2	Match Between System and the Real World	1,0	The language and terminology are easy for users to understand.
3	User Control and Freedom	1,5	Navigation is clear, with no undo/redo feature.
4	Consistency and Standards	1,3	The design is consistent, with uniform interface elements.
5	Error Prevention	1,8	Warnings are present, but not fully optimized.
6	Recognition Rather than Recall	1,1	Icons are easily recognizable, with minimal memorization.
7	Flexibility and Efficiency of Use	1,7	Quick access is present, with limited personalization.

No	Prinsip Heuristik Nielsen	Skor Rata-rata	Catatan Evaluator
8	Aesthetic and Minimalist Design	1,4	The interface is simple, with some elements lacking clarity.
9	Help Users Recognize, Diagnose, and Recover from Errors	1,9	Error messages are clear, but solutions are not yet detailed.
10	Help and Documentation	2,0	A guide is present, but incomplete.
Rata-rata Keseluruhan		1,49	The system is good, with only minor improvements needed.

Source: (Research results, 2024)

The average score of 1.49 shows that the website complies with most usability principles, with only minor issues identified. The main weaknesses include limited error handling and incomplete documentation, which are consistent with Nielsen's (1994) findings that error prevention and help functions are often the most overlooked features in web systems. While the Siturawagede website outperforms many rural tourism platforms in terms of interface consistency, the lack of comprehensive help resources suggests an area that requires further enhancement.



Source: (Research results, 2024)
 Figure 3. Results of Heuristic Evaluation

This graph shows the average scores for the Siturawagede website based on Nielsen's ten usability rules. The lowest score, 1.0, was for the "Match Between System and the Real World" rule, which



means the website uses language that makes sense and is easy to understand. The highest score, 2.0, was for "Help and Documentation," meaning there's a need for more detailed and complete help information. The overall average score of 1.49 shows that the website has good usability, but there are small areas that could be improved, like preventing errors, providing better help, and offering more personalization. Although this study used only PSSUQ and Heuristic Evaluation, future research could use other UX methods like task-based testing or cognitive walkthroughs to get a more complete understanding.

CONCLUSION

This website system is helpful for users because it makes it easier for them to find information and finish tasks. The PSSUQ results showed an average score of 2.6, which means users are generally satisfied with the system. Even though this study didn't compare the system directly with other tourism websites or standard usability guidelines, the score of 2.6 (which is considered good) matches what has been found in past usability studies that used the same scale. For future research, it would be better to compare this system with similar websites to check how it stacks up and to better understand the results in a wider context.

Heuristic Evaluation supported this result, showing that the system was overall good but needed some small changes like making icons more consistent, making menu labels clearer, and fixing error messages. Both methods agreed that the user experience was positive, but there was still room for improvement in the finer details of the interface design. Although this study successfully measured user satisfaction and found usability problems, the results haven't been used yet in an ongoing design process. For the future, the development should include a phase where user feedback and the findings from the heuristic evaluation are used to redesign and check the interface again. This ongoing approach will make sure the system keeps improving based on real user feedback and their needs.

This evaluation gives a solid foundation for making the system better and more effective, offering a better experience for users. Like the references, the acknowledgment section isn't numbered. An acknowledgment is included only if there is one. Special thanks should go to those who funded the research or to people who were really important in making the research happen, especially those who provided the data.

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