

Evaluation Of Nias District Government Website Using Usability Testing Method

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Abstract

The website of the Nias Regency Government, niaskab.go.id, plays a crucial role in providing information and services to the community. However, there are indications that this website may have issues and weaknesses that reduce its effectiveness. A comprehensive evaluation of the website's quality and usability has not been conducted, highlighting the need for research to identify problems and provide improvement recommendations. This study aims to evaluate the Nias Regency Government website, niaskab.go.id, using the Usability Testing method developed by Jacob Nielsen. The primary objective of this research is to identify the obstacles and weaknesses of the website and provide improvement recommendations based on the findings. In conducting the research, the author used a quantitative method with a Likert scale as the measurement tool. Instrument testing was carried out using validity and reliability tests, resulting in valid and consistent findings. The questionnaire distributed referred to the Handbook of Usability Testing by Jacob Nielsen. The data analysis technique used was quantitative descriptive analysis with a descriptive statistical approach. The Simple Random Sampling technique was employed to collect data from the residents of Nias Regency. A total of 96 respondents were selected based on calculations using the Slovin formula with a 10% margin of error. The study results indicate that the niaskab.go.id website is generally categorized as good, although some weaknesses need to be addressed. The overall average score from the usability testing is 3.36 out of 5. The learnability dimension scored the highest at 3.84, followed by memorability (3.52), and error (3.29). However, the efficiency (3.24) and satisfaction (2.94) dimensions show significant potential for improvement. Although the niaskab.go.id website is generally rated as quite good, the research results indicate that there are several areas needing improvement, particularly in the satisfaction dimension (a score of 2.94 out of 5). Therefore, further improvements are recommended to enhance the quality and usefulness of this website for users.

Keywords: *Evaluation, Usability, Satisfaction, Government, Website.*

I. INTRODUCTION

The rapid development of information technology has affected various aspects of human life, including the way we access information, communicate, and participate in social and economic life. Innovations such as the Internet of Things (IoT), artificial intelligence (AI), and mobile technology have drastically changed the technological landscape. The internet, as one of the most important innovations, has become a key component in global communication. In Indonesia, internet usage continues to increase. According to data from the Indonesian Internet Service Providers Association (APJII), by 2023, 78.19% of Indonesia's population will use the internet, up from 77.02% in 2022. Nias Regency, as a 3T (remote, underdeveloped and outermost) region, is also experiencing an increase in internet access (Statistics & Nias, 2023).

One of the positive impacts of the internet in the government sector is the existence of an official government website that aims to provide information and services to the community. The Nias Regency Government has an official website, niaskab.go.id, which is regulated by the Nias Regent Regulation (Prawira & Paraniti, 2023). The website provides various services and information, including SIMPEG, LAPOR, SIAP, and SIPPN. Evaluation of government websites is essential to ensure they meet user needs and keep up with technological developments. *Usability* Testing is one of the effective methods to evaluate the usability aspects of a website, including *learnability, efficiency, memorability, error, and satisfaction*.

In the current digital era, official websites of local governments, including Nias Regency, are crucial in providing information and communication services for the community. However, there are several gaps that require further research, such as the lack of *website usability* evaluation (Supriyatna, 2019). Until now, there has been no comprehensive evaluation of the *usability of the* Nias Regency Government website using the Usability Testing method. This leaves us without valid data on the effectiveness, efficiency, and user satisfaction of the website. The appearance and structure of the website is not optimal, based on initial observations, the appearance and structure of this website is still relatively simple and less *user-friendly*. Menu organization and information layout require adjustments to make it more intuitive and easily accessible to users. Currently, there is no data available that measures the level of user satisfaction with this government website. Information about

User experience is very important to know whether this website has met the needs and expectations of the community. Potential improvements in supporting *E-Government* (Retnowati, 2012), a website that has not been thoroughly evaluated can hinder its main function as an *e-government* tool. This has an impact on efficiency, public services, and government transparency towards the community.

By identifying these gaps, this research will focus on evaluating the *usability of the* Nias Regency Government website using the *Usability Testing* method. The purpose of this research is to determine existing weaknesses, provide recommendations for improvement, and measure the level of user satisfaction. The results of the research are expected to help improve the quality of the website so that it is more adaptive and responsive to user needs (Jakob Nielsen, 1993).

A summary of ten previous studies highlights the various approaches that have been taken in website evaluation through the *Usability Testing* method. First, Yulianingsih et al (2014) evaluated the website of the South Sumatra Police Brimob Unit, this research on the South Sumatra Mobile Brigade Police Unit (Brimob) website received a score of 50%, so it can be said that the South Sumatra Brimob Police Unit website that has been made has a score of 136 or quite good (Mirza, 2014). Firdaus Rangga, et al (2023) analyzed company websites in Indonesia and the result is that this analysis conducts usability testing on Company Websites in Indonesia with case studies using the UAT (*User Acceptance Testing*) method (Firdaus et al., 2022). Michelle Lobchuk, PhD, et al (2023) examined a web-based empathy training portal where researchers found that a web-based empathy training portal was effective in increasing nursing students' empathy accuracy scores. The participants appreciated the perspective-taking method, (Lobchuk et al., 2023). A.H Muhammad, et al (2023) analyzed the Musi Village website, the results of the validity test stated that the statement items on the questionnaire were valid with a value of $r > 0.3610$ (Mogi & Giri, 2023).

The similarities in research methods and variables used between previous research and what will be done show significant relevance in the context of evaluating the Nias Regency Government website. From these studies, it can be concluded that Usability Testing analysis has become a commonly used approach in evaluating websites, focusing on ease of use, user satisfaction, and overall system efficiency.

The author conducts research that is different and has not been carried out by previous research, focusing on website evaluation using the *usability testing* method which emphasizes more on the *satisfaction* aspect. This research is designed to identify the extent to which

users are satisfied with the features provided by the Nias Regency Regional Government website. In its implementation, the author uses quantitative methods with a descriptive approach to collect and analyze data. The data obtained is statistical in nature and is presented in a descriptive form that is easy to understand, with depictions through simple words and sentences. In addition, this research also emphasizes the validation of questionnaires before being distributed in the field, by conducting validity and reliability tests to ensure that the data collected is accurate

and reliable. This validation process aims to increase the validity of the data, so that the research results are more actual and can provide appropriate recommendations for the improvement of the website.

II. METHODS

In this study, the authors used a descriptive quantitative approach method, which produces statistically measured data to describe situations, phenomena, or circumstances. The population of *unique* users in this study was 960 people from June 2022 to November 18, 2023. This study uses the *Simple Random Sampling* technique (Sugiyono, 2013) to take random samples. The sample size was determined using the Slovin formula (Qotrun A, 2021), and a Likert scale was used to measure respondents' responses and reactions (Budiaji, 2013). The validity and reliability of the questionnaire were tested to ensure the validity and consistency of the data collected. The validity test involves comparing the correlation values of the research variables with the table values, while the reliability test evaluates the consistency of the measuring instrument in providing reliable results. In collecting data as raw material to be analyzed/managed, the authors use the Slovin formula (1960), this is because the population is known, this formula is used to determine the minimum number of people who must be sampled to represent the entire population (Qotrun A, 2021). Slovin's formula is:

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

n = number of samples

N = number of population

e = maximum error limit tolerated in the sample, aka significance level is 10%

$$n = \frac{960}{1 + (960(0.10)^2)}$$

$$n = \frac{960}{1 + (960 \times 0.01)}$$

$$n = \frac{960}{1 + 9.60}$$

$$n = \frac{960}{10.60}$$

$$n = 90.57$$

Based on calculations using the Slovin formula and a margin of error of 10%, the number of samples the minimum is 91 people. However, taking a sample larger than 91 people is better and justified method, as done by researchers with 96 respondents, can increase the accuracy and reliability of research results. A larger

sample reduces sampling error and produces estimates that are more representative of the population. The instrument used is a variant of the Usability Testing questionnaire which has been modified to assess the level of Usability and measure user satisfaction of the Nias Regency Regional Government Website.

Table 1.**Usability Testing Questionnaire**

CODE (1)	STATEMENT (2)
<i>Learnability</i>	
Q1	Easy to use website
Q2	Easy to understand website
Q3	Menus and features displayed are clear
Q4	The menu flow presented is easy to understand
Q5	Symbols/images displayed are easy to understand
Q6	Easy to read <i>font</i> type
<i>Effeciency</i>	
Q7	Information displayed The website runs quickly
Q8	Can access the menu quickly
Q9	Easy to navigate
<i>Memorability</i>	
Q10	Website address is easy to remember
Q11	The menu I'm looking for is easy to find
<i>Error</i>	
Q13	When accessing the Website, no Website address was found
<i>Error</i>	
Q14	The menu on the website has no <i>errors</i>
<i>Satisfaction</i>	
Q15	Website display is interesting and not boring
Q16	The content displayed is as expected
Q17	I would like to visit this website again
Q18	The information presented is <i>up-to-date</i>

Source: Processed by the author, 2023 and (Fernando et al., 2022)

The measurement scale used is the Likert scale, where each answer given by the respondent is given a value based on the weight according to the Likert scale provisions. To process the data, the author uses the mean formula to get average results.

$$\bar{X} = \frac{\sum X_i}{N}$$

$\bar{X}$ = Reads X bar, meaning the mean or middle value

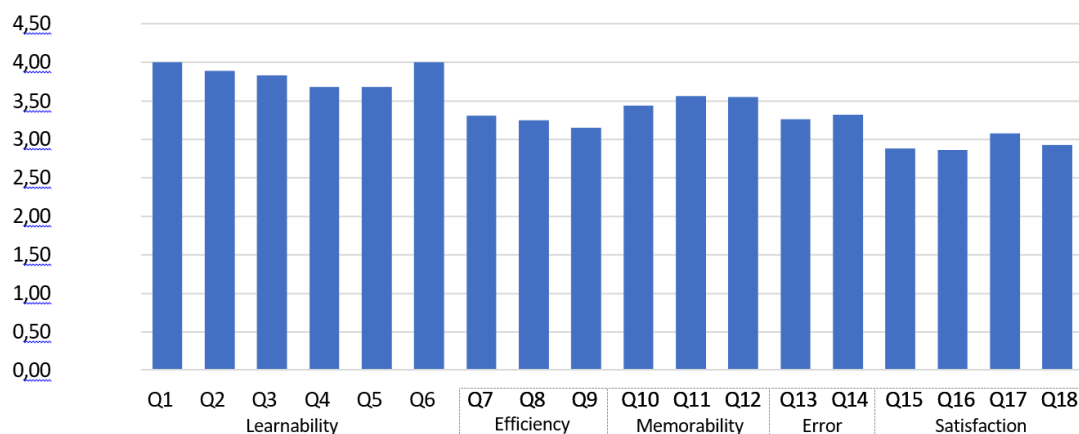
$\sum X$ = Reads the sigma of X which means the total of all values

K = The amount of data we have

III. RESULTS AND DISCUSSION

Figure 1.

Nias Regency Regional Government website using the usability testing method



Source: Processed by the author, 2023

The author evaluates the which uses the theory of Jacob Nielsen's *Usability Testing Method* (Rubin & Chisnell, 2008). There are 5, namely *Learnability* (ease of user understanding of features), *Efficiency* (speed of task completion), *Memorability* (ability to remember how to use), *Errors* (frequency and intensity of errors), and *Satisfaction* (user satisfaction) (Lewis, 2006).

Table 2.**Learnability**

	Q1	Q2	Q3	Q4	Q5	Q6	RESULTS
TOTAL	384	373	368	353	353	384	2215
MEAN	4,00	3,89	3,83	3,68	3,68	4,00	3,84

Source: Processed by the author, 2023

From the results of data processing that researchers have done, the data above shows the level of *Learnability* or ease of using the niaskab.go.id website is categorized as easy (with a value around 3.84 on a scale of 5). It can be concluded that the website that has been created is very capable and easy for users to understand as well as the consistency of the website interface, so that it helps users in learning and understanding the use of the website. This value or *score* is the dimension that has the highest value on the niaskab.go.id website, but of course it is still not optimal. To have a very good/satisfactory website, the score must reach 4 out of 5.

Table 3.**Efficinecy**

	Q7	Q8	Q9	RESULTS
TOTAL	318	312	302	932
MEAN	3,31	3,25	3,15	3,24

Source: Processed by the author, 2023

From the results of data processing that researchers have done, the data above shows that the level of *efficiency* of the niaskab.go.id website is categorized as good. (with values ranging from 3.24 on a scale of 5). This shows that the performance of the website is efficient in providing services and information to users. This dimension refers to the time required by users to complete certain tasks. With a high level of efficiency, users can access website features or content quickly without a hitch. Through continuous website management and attention to efficiency, this website can certainly continue to provide good service to its users and become an actual source of information. A score of 3.24 out of 5 is indeed good, but this score still tends to need *more up to date* website development.

If the *Effeciency* dimension of a website is improved through *usability* testing, then users will be able to complete their tasks more efficiently and quickly. A competent *usability* tester can help improve the efficiency of a website by identifying constraints that prevent users from achieving the usability goals of the site. Thus, the performance of the website can be improved and provide a more optimized usage experience.

Table 4.**Memorability**

	Q10	Q11	Q12	RESULTS
TOTAL	330	342	341	1013
MEAN	3,44	3,56	3,55	3,52

Source: Processed by the author, 2023

From the results of data processing that researchers have done, the data above shows that the level of *Memorability* (Ease to remember) on the niaskab.go.id website is categorized as good. (with values ranging from 3.52 on a scale of 5). This shows that the niaskab.go.id website has a good level of memorability, with an average answer of 3.52 on a scale of 5. Thus users feel that this website is easy to remember and recognize. In this case, of course, if the website is easy for users to remember, it will be able to build a positive image of the agency and present a good user experience, through this it can also help the website to continue to grow and become the main destination for users in finding information and services provided.

Table. 5**Error Rate**

	Q13	Q14	RESULTS
TOTAL	313	319	632
MEAN	3,26	3,32	3,29

Source: Processed by the author, 2023

From the results of data processing that the researchers have done, the data above shows that the level of *error* or error on the niaskab.go.id website is categorized as good. (with values ranging from 3.29 on a scale of 5). This shows that the niaskab.go.id website has a low error rate. However, in the long run, it is very important to pay attention to routine website maintenance and regular *maintenance* so that it can minimize errors that can adversely affect the user experience when accessing the website. In *usability testing*, there are several types of *errors* that can occur, such as navigation *errors*, data input errors, and information interpretation *errors*. Therefore, improvement efforts are needed. This can be done by identifying the root cause of the error and fixing design elements or features that are not operating properly. In addition, improvements can also be made by providing more detailed and understandable *feedback* for users.

Table 6.

Satisfaction

	Q15	Q16	Q17	Q18	RESULTS
TOTAL	277	275	296	282	1130
MEAN	2,88	2,86	3,08	2,93	2.94

Source: Processed by the author, 2023

From the results of data processing that researchers have done, the data above shows that the level of Satisfaction on the niaskab.go.id website is categorized as sufficient (with a value around 2.94 on a scale of 5). This shows that the level of user satisfaction is still in the moderate/low category and needs a lot of development/improvement. *Satisfaction* in the context of *usability* testing refers to the level of user satisfaction with the experience of using the tested website. From the results of measuring user satisfaction, information can be obtained about how well the website functions and areas that need improvement. By increasing user satisfaction, the website will become more effective in achieving its goals. Therefore, user satisfaction is a very important aspect of *usability* testing because it can help improve website performance and success.

Based on these results, the level of user satisfaction on the niaskab.go.id website is classified in the moderate category, with a value of 2.94 on a scale of 5. This indicates the need for immediate handling. To overcome this problem, the website development team, in this case the Communication and Information Technology Office of Nias Regency, needs to immediately identify problems and fix the root causes of why users are still dissatisfied with the niaskab.go.id website.

Discussion of Key Research Findings

This study found that the *usability of the* Nias Regency Government website still needs to be improved, which is in line with the results of previous studies such as those conducted by Yulianingsih et al. (2014) on the website of the South Sumatra Police Brimob Unit. They also found that the appearance and structure of the website was not optimal and less *user-friendly*. This shows that the problems found on the Nias Regency Government website are common problems that often arise on government websites in Indonesia.

In contrast to the research findings of Firdaus Rangga et al. (2023) who evaluated corporate websites in Indonesia and found that corporate websites tend to have higher levels of user satisfaction, this study found that the level of user satisfaction of the Nias Regency Government website is still low. This could be due to differences in user characteristics and the purpose of government websites that are different from corporate websites. Government website users may be more focused on accessing

public information and services, while corporate website users may be more looking for product services and a higher interactive experience. This finding strengthens previous research such as that conducted by Agastia Maulana et al. (2022) on the website of Dinas Kominfo Kabupaten Buleleng, where they also found that local government websites often have menu settings and information layouts that are not intuitive and require customization. This study also found similar issues on the Nias Regency Government website, which suggests that improvements in *user interface* and navigation are a common need in many local government websites.

These findings reject the research conducted by Michelle Lobchuk et al. (2023) on a web-based empathy training portal, where they found that aspects of user satisfaction could be optimized through interactivity and relevant content. Although the Nias Regency Government website has provided sufficient information, the lack of interactivity and *non-user-friendly* content structure causes the level of user satisfaction to remain low. This shows that simply providing complete information is not enough to increase user satisfaction without paying attention to interactivity and ease of access.

This research provides recommendations similar to those given by Eko Saputra (2014) in his research on the Palembang City Inspectorate website, namely the importance of continuous evaluation and adjustment based on user *feedback*. Recommendations for the Nias District Government website include improvements in appearance and structure, adjustments to menu navigation, and increased interactivity to support more effective and efficient e-government. This research ensures that the data obtained is accurate and reliable, which makes the recommendations given more targeted and useful for future website improvements. This research brings a new contribution by emphasizing aspects of user *satisfaction* that have not been discussed in depth in previous research. Using quantitative methods and a descriptive approach, this research successfully collected and analyzed statistical data that provides a clear picture of the weaknesses and strengths of the Nias Regency Government website. The validation of the questionnaire also ensures that the data obtained is accurate and reliable, so that the results of this study can provide appropriate recommendations for website improvement. By comparing the findings of this research with previous studies, it can be concluded that although there are some similarities in the problems faced by local government websites, this research makes a significant contribution in terms of evaluation methods and emphasis on aspects of user satisfaction, which are expected to help improve the quality of information and communication services through the Nias Regency Government website.

IV. CONCLUSIONS

Based on the results of research that has been conducted related to the evaluation of the Nias Regency Local Government Website using the *Usability Testing* method, it can be concluded that overall this website shows positive results with an average

usability testing score of 3.36 out of 5. However, these results are not entirely satisfactory and still require a lot of improvement. Key findings showed several significant weaknesses, including slow page *loading* speed, *out-of-date* information, slow links to other applications/websites, out-of-date Lakip features, absence of Satu Data Indonesia information, and missing information and features on the Community Satisfaction Survey (SKM). In addition, the linking feature to regional apparatus websites often experienced problems and slow loading, hampering user accessibility.

To overcome these weaknesses, several improvements are recommended, such as regular monitoring of the website system, involving users in providing feedback, periodic evaluation of website performance, and improving the appearance of the website to make it more responsive and attractive. The evaluation shows that although this website has succeeded in terms of usability, there are still some areas that need improvement. The *learnability* dimension has the highest score with 3.84, followed by *memorability* with 3.52, and *error* with 3.29. The *efficiency* dimension has a score of 3.24, while the *satisfaction* dimension has the lowest score of 2.94 out of 5, which illustrates that the level of user satisfaction is still lacking and needs a lot of improvement. Overall, although this website can be categorized as good, the difference with the sufficient category is very thin, so it requires continuous improvement.

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