



Usability Evaluation Using Heuristic Method Against NELPIN Website

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ABSTRACT

The wealth of marine resources in Indonesia is known to be very abundant, especially in fishery products, but until now many fishermen have not been maximal in carrying out fishing activities. Therefore, related parties have launched the NELPIN website which can make it easier for fishermen to carry out fishing activities. To prove that the website can provide convenience to its users, it is necessary to evaluate the usability to test the NELPIN website using the Heuristic method. The system itself needs to be evaluated so that it can be seen whether the system is functioning as desired and errors or deficiencies in the system can be identified and corrected as quickly as possible. The data from this research will be obtained from filling out a questionnaire containing questions regarding usability aspects to evaluate whether the NELPIN website provides convenience for its users or not. Then the results of filling out this questionnaire will be analyzed to draw conclusions and the researchers will provide suggestions that the NELPIN website development team might use to make improvements to the usability of the website.

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1. Introduction

Indonesia is famous for its abundant marine resources, especially its fishery products, but it can be seen that fishermen in Indonesia have not been able to maximize their fishing activities. Fishermen themselves are one of the parties involved in the fisheries sector other than the KKP (Ministry of Marine Affairs and Fisheries). To overcome this problem, the Center for the Assessment and Engineering of Marine and Fisheries Technology (P3TKP) has launched an Information System in the form of a website that can make it easier for fishermen to carry out fishing activities. This information system is known as Smart Fishermen or NELPIN.

For information, the website which has been developed since 2015 has never been evaluated for its usability. Therefore, the researcher decided to evaluate the usability of the NELPIN website by looking at the usability problems found on the website. The system itself needs to be evaluated so that it can be known whether the system is functioning as desired and errors or deficiencies in the system can be identified and corrected as quickly as possible (Ali, 2016).

This study uses the Heuristic method, where the Heuristic method itself is a method used to solve a usability problem based on the user interface design aspect (Tengku, 2019). This heuristic method was first proposed by Nielsen and Mack in 1990. This method has 10 aspects that can be used to determine whether there are usability problems in a system. The results of this evaluation are expected to be a guideline for the NELPIN website development team so that usability improvements can be made so that satisfaction can be achieved for its users.

2. Method

The research method used in this study consisted of conducting a literature study, then evaluating the website by distributing online questionnaires, then analyzing the results of the questionnaire, then finally drawing conclusions and providing suggestions based on the results of the evaluation that had been carried out.

1. Doing Literature Study

This literature study was conducted in order to obtain a solution to the research problem. At this stage, researchers usually look for references that support and can be used in their research.

2. Evaluating the Website

This evaluation consists of filling out a questionnaire and testing the usability of the website. This questionnaire was filled out in order to determine the level of satisfaction of users when accessing and using the NELPIN website. The questionnaire will be distributed online via google form. This questionnaire will contain questions based on 8 aspects of usability which are filled out by respondents who are generally SIK students with a target respondent of 32 people.

3. Conducting Analysis of Questionnaire Results

After filling out the questionnaire has met the target, then an analysis of the results of the questionnaire is carried out to draw a conclusion.

4. Drawing Conclusions and Giving Suggestions

Analysis resultIn this study, conclusions will be drawn by referring to the overall research objectives. After getting a conclusion, then researchers need to determine the right suggestions so that they can be used as guidelines for NELPIN website developers to make improvements to the usability of the website.

3. Result and Discussion

The assessment in this evaluation will use a number scale consisting of 1 - 4. The larger number indicates that the respondent increasingly disagrees with the existing statement. Meanwhile, the smaller number indicates that the respondents increasingly agree with the existing statements. The following is a clear explanation of the rating scale.

TABLE 1
RATING RATING CLASSIFICATION

Scale	Information
1	Strongly agree
2	Agree
3	Don't agree
4	Strongly disagree

This data collection was carried out from May 22, 2022 to May 27, 2022, involving 32 respondents consisting of 62.5% women and 37.5% men. It is also known that the percentage of age for each respondent is 87.5% aged 17-20 years, 9.4% with an age range of 21-25 years, and 3.1% aged 26-30 years. In this study, 8 Heuristics Evaluation variables were used, namely.

TABLE 2
 VARIABLE HEURISTIC EVALUATION

Code	Variable	Information
(H1)	<i>Visibility of System Status</i>	to find out whether the website always provides information to users regarding the ongoing situation.
(H2)	<i>Match between system and the real world</i>	to find out whether the language, terms, symbols/icons used are easy to understand
(H3)	<i>User control and freedom</i>	to find out if the undo and redo features are available when accidentally making a mistake that a user might make.
(H4)	<i>Consistency and standards</i>	consistent use of design and appearance.
(H5)	<i>Error prevention</i>	prevent errors that may occur.
(H6)	<i>Recognition rather than recall</i>	Minimize usage in remembering existing features and functions.
(H7)	<i>Flexibility and efficiency of use</i>	to be able to find out whether a software system can make work faster and whether the process has a fast way.
(H8)	<i>Aesthetic and minimalist design</i>	design which is aesthetically pleasing will not interfere with the user in running a system.

Usability Analysis Results

TABLE 3
 RECAPITULATION OF ANSWERS TO VARIABLE H1

No	(H1) Visibility of System Status	Scale			
		SS (%)	S (%)	TS (%)	STS (%)
1	The menu available on the NELPIN website has covered all the information needed for the website	11	40	26	23
	Average	11%	40%	26%	23%

The results of the recapitulation of the H1 variable are shown in Table 2. It shows that the highest percentage is on the "Agree" scale with a percentage of 40%, which means that respondents agree that the menu displayed on the NELPIN website includes all information needs.

TABLE 4
 RECAPITULATION OF ANSWERS TO VARIABLE H2

No	(H2) Match between system and the real world	Scale			
		SS (%)	S (%)	TS (%)	STS (%)
1	The language used on the website is easy to understand	12	27	28	33
2	The terms on the website are easy to understand	9	29	36	26
3	The icons available on the website are easy to understand and function according to their purpose	9	32	37	22
	Average	10%	29.3%	33.6%	27%

The results of the recapitulation of the H2 variable are shown in Table 3. It shows a percentage of 39.3% of respondents stating "Strongly agree" and "Agree". Meanwhile, the percentage of 60.6% of respondents stated "Disagree" and "Strongly disagree". Of the 60.6% respondents, the largest percentage is in H2.3 with 37% of respondents stating "Disagree", which indicates that the icons available on the website are still poorly understood and do not fit their purpose.

TABLE 5
RECAPITULATION OF ANSWERS TO VARIABLES H3

No	(H3) User control and freedom	Scale			
		SS (%)	S (%)	TS (%)	STS (%)
1	Availability of a back button on the website display if the user wants to return to the previous page or to cancel an action	12	24	37	27
2	Availability of a help button when the system does not process any action (such as: error)	12	27	28	33
3	Jumlah konten serta informasi yang ditampilkan mempengaruhi pemakaian saat mengakses website	7	41	36	16
	Rata-rata	10,3%	30,6%	33,6%	25,3%

Hasil rekapitulasi variabel H3 yang ditunjukkan pada Tabel 5. Menunjukkan skala TS dan STS lebih besar dari pada skala SS dan S dengan 58,9% responden menyatakan "Tidak setuju" dan "Sangat tidak setuju". Hal tersebut terjadi karena sebagian responden mengaku masih merasakan adanya kesulitan.

TABEL 6
REKAPITULASI JAWABAN VARIABEL H4

No	(H4) Consistency and standards	Skala			
		SS (%)	S (%)	TS (%)	STS (%)
1	Setiap halaman pada website memiliki tampilan serta isi yang sesuai	11	36	25	28
2	Judul pada katalog ditampilkan dengan konsisten	9	32	37	22
3	Standar penulisan pada website sudah konsisten di setiap halamannya	11	30	42	17
4	Ikon pada setiap halaman website sudah konsisten	11	34	33	22
5	Design tampilan pada setiap halaman website sudah konsisten	11	30	37	22
	Rata-rata	10,6%	32,4%	34,8%	22,2%

The results of the recapitulation of the H4 variable are shown in Table 6. It shows that the scale of "Disagree" and "Strongly disagree" is greater (57%) compared to the scale of "Strongly agree" and "Agree" (43%). Constraints that are still experienced by respondents:

- "There are some icons that are out of place"
- "There are some icons that don't match their names and functions,..."

TABLE 7
RECAPITULATION OF ANSWERS TO VARIABLE H5

No	(H5) Error prevention	Scale			
		SS (%)	S (%)	TS (%)	STS (%)
1	There is a connection when the internet is disconnected	7	17	47	29
	Average	7%	17%	47%	29%

The results of the recapitulation of the H5 variable contained in table 7 show that the highest percentage is on the "disagree" scale, which is 47% so that it can be interpreted that there is no connection when the internet is disconnected. However, there are still some obstacles experienced by respondents when accessing the website. Here are some of the obstacles that occur:

- "This is also why I can't access the website for some reason, just the homepage. If you click anything else, only a white blank appears"
- "... It's like the search often doesn't show what you're looking for"
- "There are some features that when I press the data does not come out, ..."

TABLE 8
RECAPITULATION OF ANSWERS TO VARIABLE H6

No	(H6) Recognition rather than recall	Scale			
		SS (%)	S (%)	TS (%)	STS (%)
1	I easily remember the menus and page views available on the website	10	39	34	17
2	When I look back at this website, I easily recognize the menus and page views available on the website	9	32	37	22
Average		9.5%	35.5%	35.5%	19.5%

The results of the recapitulation of the H6 variable in table 8 show that 39% of respondents agree with H6.1 so that it can be interpreted that the menus and page views on the website can be remembered easily. While 37% of respondents said they did not agree with H6.2

TABLE 9
RECAPITULATION OF ANSWERS TO VARIABLE H7

No	(H7) Flexibility and efficiency of use	Scale			
		SS (%)	S (%)	TS (%)	STS (%)
1	Menus and information are well grouped	13	35	40	12
2	Can access features quickly	8	36	45	11
3	The time it takes for the website to respond is in accordance with what is expected	13	35	40	12
Average		11.3%	29.6%	35.3%	11.6%

The results of the recapitulation of the H7 variable shown in table 9 show that 46.9% of respondents stated "Disagree" and "Strongly disagree" while as many as 40.9% of respondents stated "Strongly agree" and "Agree". It can be seen from the table above that some respondents experienced problems when accessing website features. The following are some of the obstacles experienced by respondents:

- "When accessing loading, it tends to take a long time and even errors, requiring a fast internet connection, while people who live far away in cities have internet connections that tend to be slow"
- "The main problem that I feel is that the website response takes a little longer compared to similar field websites"

TABLE 10
RECAPITULATION OF ANSWERS TO VARIABLE H8

No	(H8) Aesthetic and minimalist design	Scale			
		SS (%)	S (%)	TS (%)	STS (%)
1	All the information available in the detail catalog is useful	15	39	22	24
2	All colors on the website are consistent	14	26	48	12
3	The layout on the menu is familiar and easy for users to use	17	33	32	18
Average		15.3%	32.6%	34%	18%

The results of the recapitulation of the H8 variable shown in table 10 show that 47.9% of respondents stated "Strongly agree" and "Agree", while the percentage of 52% of respondents admitted to disagree and strongly disagree. Respondents who most disagreed were in section H8.2 where

respondents considered that the color suitability on the website was not consistent, so an improvement was needed on the website by changing the color details to be more consistent.

3 Conclusion

Based on the data from the questionnaires discussed in the results and discussion above, it can be concluded that website NELPIN still has many problems, such as the presence of several icons that do not match the name, place, and function; some features are not accessible; problem website response is still lacking; and consistency of color suitability on the website is still lacking.

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