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# Usability Analysis on the Ciamis Regency Communication and Information Service Website Using Heuristic Evaluation

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***Abstract*— The website of the Ciamis Regency Communication and Informatics Service (Diskominfo) has an important role in providing transparent and accurate information to the public, as well as a means of communication between the government and citizens. Usability problems can vary, ranging from unintuitive interface design, confusing navigation, to information that is difficult to find. This can have an impact on inadequate user experience, which in turn can reduce the effectiveness of the website as a medium for communication and information dissemination. The purpose of the usability analysis of the Ciamis Regency Communication and Informatics Service (Diskominfo) website is to improve the quality of the website, an evaluation of the usability aspects of the website is needed. One method used to identify usability problems in website development is Heuristic Evaluation. The evaluation results showed several usability problems in the aspects of System status visibility, Consistency and standards, Helping users recognize, diagnose, and recover from errors, Recognizing rather than remembering, Aesthetic and minimalist design. Based on these findings, it is recommended that the Ciamis Regency Diskominfo make improvements to the website design to improve the user experience. This study contributes to the development of a more user-friendly website design and increases efficiency in delivering information to the public.**

***Keywords*— Communication and Information Service, Heuristic Evaluation, Usability, Government Website**

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## I. INTRODUCTION

The development of the digital globalization era is marked by various changes in various aspects of human life. As a very visible and contrasting example, the development in the field of technology which has also experienced rapid development from year to year. Local governments are increasingly paying attention to the importance of building online infrastructure that can provide accessibility to information to the public. One of the efforts made is to provide an official website containing information related to local government activities, services, and policies[1].

Information technology is one part of the need for the development of the era that helps its users to be easier and more efficient in its use. The increasingly developing technology does not become an obstacle for its users to use the available information system. An information system that is designed and built according to the user's wishes is an information system that is made according to the needs of the user (Fatmasari & Ariandi, 2014)[2].

The Communication and Informatics Agency (DISKOMINFO) is a government agency that has an important role in managing, disseminating, and regulating information and communication at the regional or district/city level. Diskominfo is tasked with supporting the management of public information and communication between government agencies and the public, as well as ensuring the dissemination of information that is accurate, transparent, and easily accessible to the public. In this context, the Ciamis Regency Diskominfo has also presented an official website as a means of communication and information to the public (Laihad, 2013). [3]

There are many applications on the internet that function as media that provide information needed by various users, one of which is online media such as websites. From data reported by the Hootsuite content management service, internet users in Indonesia increased by 15.5% or 27 million people from 2020 to January 2021. From these data, it indicates that many internet users use internet applications that function as media to find the information they need. Implementation in building a website, the quality of the user interface is very much needed in building a good user experience for users [4].

Websites as a medium for disseminating information are needed so that information is conveyed widely and well. One of them is the Ciamis Regency Communication and Informatics Service (DISKOMINFO) which utilizes a

website as an online information media that can be accessed by anyone, anytime, and anywhere. The website is located at https://diskominfo.ciamiskab.go.id/. And based on the literature study that has been conducted, the Ciamis Regency Communication and Informatics Service Website has been tested in previous studies, but because of the frequent periodic updates, it is necessary to re-test to ensure that the application is well received by its users [5].

In general, in the process of software development and implementation, usability testing is rarely done. This is due to the main focus on aspects of data management, needs, schedules, and resource availability. In fact, there is often a debate between users and system makers (Nurhadryani & Sukoco, 2014).

Based on these problems, this research was conducted with the title "Usability Analysis on the Website of the Communication and Informatics Service of Ciamis Regency Using the Heuristic Evaluation Method." The measurement of the quality of the Heuristic Evaluation (HE) is expected to produce an assessment from respondents as well as problems and solutions suggested by the evaluator to identify existing usability problems and become a reference for further improvements [6].

## 2. LITERATURE REVIEW

### *2.1. Theoretical basis*

#### *2.1.1. User Experience*

User experience (UX) is (INDONESIA, T., 2018) the process of increasing user satisfaction (application users, website visitors) in increasing the usability and pleasure provided in the interaction between users and products. In simple terms, UX Design is the process of making a website or application that you create easy to use and not confusing when used by users.

#### *2.1.2 Usability*

According to (Nielsen, J., 2012) usability is a quality attribute that assesses how easy a user interface is to use. The word "usability" also refers to methods for improving ease of use during the design process.

#### *2.1.2.1 Usability Quality*

Usability has an important point in the quality of a system. According to (Nielsen, J., 2012) usability quality is divided into five components including learnability, efficiency, memorability, error & safety, and

Satisfaction (Manurung, 2019), learnability is the ease with which a software application or product can be taken and understood by the user.

Ease for users to understand the use of a website or system. Measurement can be done by analyzing users when performing a task or searching for information. Efficiency is an effort after users learn the design, how quickly they can perform tasks.

Memorability is the ability when users return to a design after a period of not using it, how easily they can rebuild their proficiency. The assessment is seen in terms of the use of features, menus, and the process of use. Satisfaction is how enjoyable it is to use the design. For example, users get the desired information or access the system easily.

#### *2.1.2.2 Methods and Stages in Usability*

There are many ways that can be used in using usability. (Aziza, 2019) said that without thorough preparation and design, a particular website cannot run optimally. Conducting a review with several methods in usability can help in research on Heuristic Evaluation.

To conduct usability testing, there are several steps that must be taken, including:

1. Usability Testing Components

   The usability testing components consist of two things, namely:

   a. Learning, is a measure of success that arises from the completion of tasks by each type of participant and the comparison between the number of pages and the overall average visit results.

   b. Efficiency, is a group of users in carrying out various tasks (Sastramihardja, 2006).

2. Usability Testing Respondent Selection

   The selection of participants who will respond to the questionnaire involves: individuals who actively use the internet, individuals who are proficient in using the internet, and individuals who access the internet in general. (Rusidi et al., 2011)

### *2.2 Heuristic Evaluation*

According to (Abulfaraj, A., & Steele, A., 2020) heuristic evaluation is an inspection-based usability evaluation method that assesses the usability of a system based on a set of usability guidelines. Heuristic Evaluation (HE), In this study a new heuristic was developed to expand the heuristic to support the evaluation of the Ciamis Regency Communication and Informatics Service (Kominfo) website. The validation results show that using the newly developed heuristic allows evaluators to detect more usability problems when evaluating the Ciamis Regency Communication and Informatics Service (Kominfo) website.

Heuristic Evaluation can be part of a usability assessment, one of which according to Nielsen, 1994 explains that there are 10 usability heuristics which can be seen in table 2.1 as follows:

Table 2.1 Heuristic Evaluation

| No | Heuristic Name | Explanation |
|---|---|---|
| 1 | *Visibility of system status* | A system must provide users with information about what is happening, through appropriate feedback within a reasonable time frame. |
| 2 | *Match between system and the real world* | The system must use language that is appropriate to the user's language, such as words, phrases and concepts that are familiar to the user. |
| 3 | *User control and freedom* | Users often do things unintentionally. An "Emergency Exit" is needed to help users get out of unwanted situations. |
| 4 | *Consistency and standards* | Users do not need to ask again whether words, situations or actions have the same |

| | | meaning |
|---|---|---|
| 5 | *Error prevention* | Error messages are useful but careful design is one that prevents a problem from occurring. |
| 6 | *Recognition rather than recall* | Users do not need to bother to remember each piece of information from one section to another. |
| 7 | *Flexibility and efficiency of use* | Hide Accelerators so they are invisible to beginners but speed up interactions for expert users so the system can serve both beginners and experts. |
| 8 | *Aesthetic and minimalist design* | The interface should not contain irrelevant or rarely needed information. Where the visual elements of the interface can support the user's primary goal. |
| 9 | *Help User Recognize, diagnose and recover from errors* | Error messages must be stated in easy-to-understand language, accurately indicate the problem and provide a constructive solution. |
| 10 | *Help and documentation* | The good thing is that the system no longer needs additional explanation. However, it is necessary to provide documentation to help users understand how to complete their tasks. |

### *2.2.1 Advantages and Disadvantages of Heuristic Evaluation*

(Ependi, U., Kurniawan, T., & Panjaitan, F., 2020) explains that in using the Heuristic Evaluation method, this method has the following advantages:

1. Get feedback faster and relatively cheaper.
2. Get feedback from the beginning of the software design.
3. Helps design improvements faster.
4. Can be used in conjunction with other testing methodologies.
5. Can identify potential problems early.

Heuristic Evaluation also has shortcomings as below:

1. Requires knowledge and experience for the tester.
2. The expert whoExperienced people are sometimes hard to find and expensive.
3. Using multiple experts and combining their opinions.
4. Found more small problems than big ones.

### *2.2.2 Severity Ratings*

According to (Popovic, 2019) the scale for identifying and determining the severity of usability problems is severity ratings. Severity ratings of usability issues are a combination of three factors, namely:

1. Frequency, represents whether the problem occurs frequently or not.
2. Impact, shows whether solving the problem is easy or difficult for the user.
3. Persistence, that is, whether this is a one-time problem that users can overcome once they are aware of it or will users be repeatedly bothered by the problem. Table 2.1 below can be used to assess the severity of a usability problem.

Table 2.2.2 Saverity Rating

| ***Severity Rating*** | **Explanation** |
|---|---|
| 0 | *I don't agree*: A form of failure that has no impact |
| 1 | *Cosmetic problems only*: When the developer has extra time for new projects to be fixed |
| 2 | *Minor usability issues*: Low priority but needs to be fixed |
| 3 | *Major usability problems*: User is having difficulty and needs to be fixed |
| 4 | *Usability catastrophe*: Need to be fixed soon because user can't use it |

Source: (Ghose, 2018)

In Table 2.1, it is explained that severity ratings have 5 levels. To find out the severity of the usability problem, it is known from the severity ratings, which are known from 0 to 4.

The use of this scale is to measure the level of difficulty of the usability problems that have been found based on the evaluation that has been done. Each level of the scale represents the value of the problem itself.

### *2.2.3 Likert Scale*

In this study, the author uses a Likert scale to assess the answers to the questionnaire. The reason why the author uses a Likert scale is based on the journal "Likert items and scales of measurement?" by James Dean Brown, which states that the Likert scale contains several points that can be used as an interval scale that can be explained by statistical data, correlation analysis, factor analysis, analysis of procedural diversity, and so on (Brown, 2011).

In the Likert scale there is a table to determine the amount of value of a scale used. Here is a Likert scale ranging from 1 to 5, the value represents the answer with a predetermined scale, namely:

Table 2.2 Likert Scale, Value Weight and Percentage (Brown, 2011)

| **Scale** | **Weight value** | **Presentation** |
|---|---|---|
| Strongly Disagree | 1 | 0% - 19.9% |
| Disagree | 2 | 20% - 39.9% |
| Neutral | 3 | 40% - 59.9% |
| Agree | 4 | 60% - 79.9% |
| Strongly Agree | 5 | 80% - 100% |

### *2.2.4 Expert Evaluator*

According to (Jeff, 2018) in his article entitled "Do Novices or Experts Uncover More Usability Issues", the article explains that comparing two topical case studies, experts can find more usability problems than novices and five topical studies of novices find more problems than experts, all of which were obtained from experts.

From the results of the comparison, it is concluded that beginners are more likely to find many usability problems than experts, even though there are many who compare beginners with experts but try to use beginner and expert evaluators in implementing a study like that, researchers will be able to find out what problems exist both in terms of beginners and experts, because not all beginners can conclude the existing problems and not a few experts also find new problems that are different from the problems conveyed by beginners. Based on Neilsen (1994) the number of good evaluators for this study is 3-5 evaluators.

## 3. METHODOLOGY

### *3.1 Types of Research*

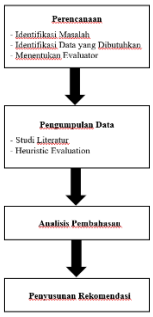
This type of research uses quantitative research. Quantitative research is a research procedure that is carried out systematically, planned and structured. Quantitative research methods can also be interpreted as research methods based on the philosophy of positivism, used to research certain populations or samples, data collection using research instruments, data analysis is quantitative/statistical, with the aim of testing the established hypothesis (Sugiyono, 2011).

### *3.2 Research Location*

This research was conducted at the Communication and Informatics Office (DISKOMINFO) of Ciamis Regency, which is located in the center of Ciamis Regency, West Java. This office has a strategic role in managing communication and information systems in Ciamis Regency, including digital-based public services and the dissemination of government information.

### *3.3 Research Stages*

This research was conducted based on the stages that have been designed as in the research flow. The research flow includes all methods for evaluating the usability of the Ciamis Regency Communication and Informatics Service (Diskominfo) Website. The sequence of research steps carried out starting from literature studies, requirements design, heuristic testing, analysis and discussion, conclusions and suggestions. The following is a research flow diagram that can be seen in Figure 3.1:




3.1 Research Stages

### *3.3.1 Planning*

In this preliminary stage, several activities are carried out, including:

1. Identification of problems

The first step taken in the planning stage is to identify the problem to be solved through this research. Making a problem formulation, problem limitations, research objectives, research benefits, and research methodology. This is done so that the research can be carried out systematically and without any doubt.

2. Identify Required Data

After conducting a literature study, it is necessary to determine what data will be needed in the course of this final project research. The data needed in this study are:

a. Primary data is data obtained directly from the evaluator.

b. Secondary data, namely data obtained from literature studies or library reviews in the form of journals, scientific papers, books and documents related to the research topic.

3. Determining the Evaluator

At this stage, the determination of evaluators from experts in the field of usability is carried out. The number of evaluators for the website of the Communication and Informatics Service (DISKOMINFO) of Ciamis Regency is 3 (three) evaluators. Testing requires 3 (three) to 5 (five) evaluators needed in the research (Nielsen & Molich, 1990). In its implementation, the evaluation will be carried out by 3 (three) experts who will evaluate the interface display according to ten heuristic principles indicated by the severity rating value.

The evaluator criteria in this study are people who are experts in the fields of User Interface and User Experience, understand the usability aspects as proven by a certificate of expertise or have experience developing systems, and the evaluator is not part of the end user of a system.

The experts in this evaluation are the first evaluator is Yayu Fajriati Rahayu, a Senior Product of UI/UX designer and Software Quality Assurance at PT. Komunitas Anak Bangsa, Central Jakarta, DKI Jakarta, the second evaluator is Muhammad Nurfaadil, a Backend Developer at PT. Alfa Reka Cipta Kreasi, Kebayoran Baru, South Jakarta, and the third evaluator is Muhammad Asep Rusdi, a Businesss Consultant at PT Artha Infotama, Central Jakarta.

The evaluation will be carried out online on December 20 and 29, 2024, at different times and places to accommodate the agreement of each evaluator.

The researcher will explain to the evaluator in detail the evaluations that will be carried out using the heuristic evaluation method and explain the ten principles of the heuristic evaluation method and the subsequent Severity Level assessment to determine the Severity Level of the problems found. The researcher presents a set of documents for evaluation, and the evaluator conducts an evaluation. Furthermore, the researcher asks the evaluator to review the Solution design created and conduct an evaluation indicated by the Satisfaction Level rating.

### *3.3.2 Data Collection*

This stage contains activities in data collection, both primary data and secondary data. At this data collection stage, several activities are carried out, including:

1. Literature Study

In the literature study process, this is done by searching for and studying theories related to the Heuristic Evaluation method and the application of Usability aspects by studying books, research journals, scientific articles, and research reports, carried out in order to gain a deeper understanding of applying the Usability aspects and the Heuristic Evaluation method. Furthermore, interview activities were carried out at the Communication and Information Service (Kominfo) of Ciamis Regency, which was the object of the evaluation, in order to further deepen the problems being investigated by the researcher. The instrument or questionnaire used in this study was designed to determine the level of usability of the website of the Communication and Informatics Service (DISKOMINFO) of Ciamis Regency using the Heuristic Evaluation method. In the heuristic method, the evaluator fills in the evaluation checklist according to 10 (ten) heuristic principles indicated by the severity rating. Data collection will be carried out by preparing documents and stages of tasks that must be carried out by the evaluator in assessing the website of the Communication and Information Service (DISKOMINFO) of Ciamis Regency.

2. Heuristic Evaluation
   In the Heuristic Evaluation Testing process, the website of the Ciamis Regency Communication and Informatics Service (DISKOMINFO) will receive an evaluation from the evaluators, where each problem will be entered into 10 Evaluation Instruments which will be displayed in table form and provide a severity rating for each evaluation
   Collecting heuristic evaluation data obtained from the results of usability expert evaluations. This study uses 3 types of evaluators, namely experts in UI/UX Designer Experts, and Backend Engineer Experts, and Business Consultants.

### *3.3.3 Discussion Analysis*

The analysis and discussion stage is useful for providing the results of the evaluation document on the testing of the Ciamis Regency Communication and Informatics Service (DISKOMINFO) website using the heuristic evaluation method carried out by the evaluator. At this stage, data from two categories of users, namely beginners and usability experts. After conducting the evaluation, the researcher continued by creating a table of problem categories based on 10 heuristic evaluations that had found the problems and carried out problem mapping in order to reduce the findings of the same problems. The next step is to conduct a problem search and the final stage will be carried out improvements. The improvements must be based on the severity rating value, where problems found that have a value of 3-4 are the severity rating category of major usability problems and usability catastrophes will be a priority in improvement. The final stage is to test the improvement recommendations by applying the same method to get the results of the improvements. Whether the improvement recommendations have a positive impact or whether there is no improvement in terms of design.

### *3.3.4 Preparation of Recommendations*

The recommendation preparation stage is carried out through several activities, including:

1. Processing Questionnaire Data, at this stage the data obtained from distributing the research questionnaire to the evaluator is processed.
2. Usability Evaluation with Heuristic Evaluation, analysis and evaluation aims to produce recommendations for improving the usability problems found. This stage consists of describing the test results and interpreting the results obtained from the calculations.
3. Evaluation Result Recommendations, evaluation result recommendations are based on problems that arise from each question item and aspect contained in the Heuristic Evaluation so that they can be a reference for future improvements.

## 4. RESULTS AND DISCUSSION

### *4.1. Overview of Research Object*

The object of research conducted in this study is the website of the Communication and Informatics Service (DISKOMINFO) of Ciamis Regency which is used as a channel of information in implementing administration in the field of communication and creating open access to information and building and developing telecommunications infrastructure for the benefit of all residents of Ciamis Regency.


Figure 4.1 Website Display of the Communication and Information Service (Diskominfo) of Ciamis Regency

Based on the appearance of the Ciamis Regency Communication and Information Service (Diskominfo) website interface in Figure 4.1, it can be explained as follows:
1. There are website features that users cannot access yet, because they are required to log in or register an account first.
2. There are profile menus, homepage, information, public service information, reports, FAQs, and data.
3. There are other menu features which are hidden applications and users can set what features will be displayed on the profile page, information, public service information, and data.

### *4.2 Heuristic Evaluation*

Based on the findings by all evaluators, with a total of three evaluators. The data obtained by the evaluators were then summarized by combining the results by consolidating between evaluators regarding the heuristic evaluation principle and severity rating value. The results of the heuristic evaluation obtained several usability problems.
The most problems found are in the aspect of H9-aesthetic and minimalist design with a total of eleven problems found or 33% of the total problems found. Meanwhile. Aspects H2-

match between system and the real world, H3-user control and freedom, H5- Error prevention, and H8- flexibility and efficiency of use are aspects with the fewest problems found, namely 0 and 3% of the total problems found.

| Aspect *Heuristic* | Evaluator 1 | Evaluator 2 | Evaluator 3 | Total | Percentage Problem Findings |
|---|---|---|---|---|---|
| *Visibility of system status* | 1 | 1 | 1 | 3 | 9% |
| *Match between system and the real world* | 0 | 0 | 0 | 0 | 0 |
| *User control and freedom* | 1 | 0 | 0 | 1 | 3% |
| *Consistency and standards* | 2 | 1 | 2 | 5 | 15% |
| *Error prevention* | 0 | 0 | 0 | 0 | 0 |
| *Help users recognize, diagnose, and recover from Error* | 2 | 2 | 1 | 5 | 15% |
| *Recognitionrather than recall* | 0 | 0 | 2 | 2 | 6% |
| *Flexibility and efficiency of use* | 0 | 0 | 0 | 0 | 0% |
| *Aesthetic and minimalist design* | 4 | 3 | 4 | 11 | 33% |
| *Help and documentation* | 2 | 0 | 0 | 2 | 7% |
| Amount | | | | 24 | 100% |

In the aesthetic and minimalist design aspect, eleven problems were found with an average severity rating of minor, which is a problem with low priority. The problem from evaluator one is that too many templates and colors are used so that they do not show a minimalist design, the image size used is not appropriate so that many images are not symmetrical, the search bar on the menu tab when clicked closes all screens, the problem of evaluator two is that the quality of the images used is not good so that they are slightly blurry, the image on the pop up is not symmetrical in size, and the problem of evaluator three is that the color contrast is not good in the label field causing the text to be unreadable on the entry page.

### *4.2 Analysis and Discussion*

The following are some comments on the problems found by the evaluator which are listed in table 4.7.

| Heuristic Aspect | Evaluator 1 | Evaluator 2 | Evaluator 3 |
|---|---|---|---|
| *Visibility of system status* | There is no error message when the searched keyword does not exist. | Some websites do not redirect, it says "This site can't be reached" " | Error message still appears even though the user has filled in the form on the login page |
| *Match between system and the real world* | - | - | - |
| *User control and freedom* | The x mark on the pop up image cannot be clicked, so the user must click outside the area to close the pop up. | - | - |
| *Consistency and standards* | The spacing used is inconsistent so that some text is not evenly placed. *Search bar*The ones used are not the same between the dashboard and the description. | *Text highlight color*inconsistent, there is text that uses black as a highlight | Inconsistent spacing on the registration form. Error message on NIK field is truncated so it does not comply with information standards |
| *Error prevention* | - | - | - |

| | | | |
|---|---|---|---|
| *Help user recognize , diagnose, and recover from errors* | There is no error message when the keyword being searched for does not exist. So the user will be confused. | Some websites do not redirect. And do not use Appropriate message info | Error message on NIK field is truncated so it does not comply with information standards |
| *Recognition on rather than recall* | - | - | The error message still appears even though the user has filled in the form on the login page. Poor color contrast on the label field causes the text to be unreadable on the entry page. |
| *Flexibility and efficiency of use* | - | - | - |
| *Aesthetic and minimalist design* | Too many templates and colors are used so it doesn't show a minimalist design. The size of the images used is not appropriate so many images are not symmetrical Search bar on menu tab when clicked closes all screens | The image quality used is not good enough so it is a bit blurry<br><br>The image in the pop up is not symmetrical in size | Poor color contrast on field label causes text to be unreadable on the entry page. |
| *Help and documentation* | Some information is not documented, so users do not get information from the tabs they click. For example, in the public service information menu and service information. | | - |

The problems of the three evaluators regarding the Aesthetic and minimalist design aspects are closely related to the dialogue or information conveyed to users so that they should not convey irrelevant or unnecessary information. It is recommended to make the required content effective, pay attention to the complexity of each menu, pay attention to the contrast between the page color and the content so that the information is still conveyed, pay attention to typography and the neatness of the content. The following is a table showing the average severity rating results of the evaluation of the three evaluators.

| **Aspect** ***Heuristic*** | **Evaluator** | | | **Average Severity** ***Rating*** | **Category** |
|---|---|---|---|---|---|
| | **1** | **2** | **3** | | |
| *Visibility of system status* | 2 | 2 | 3 | 2 | *Minor* |
| *Match between system and the real world* | 0 | 0 | 0 | 0.67 | No problem |
| *User control and freedom* | 1 | 0 | 0 | 1 | *Cosmetic Problem* |
| *Consistency and standards* | 3 | 2 | 2 | 2 | *Minor* |
| *Error prevention* | 0 | 0 | 0 | 0.67 | No problem |
| *Help users recognize, diagnose, and recover from errors* | 3 | 2 | 2 | 2 | *Minor* |
| *Recognitionrather than recall* | 2 | 2 | 3 | 2 | *Minor* |
| *Flexibility and efficiency of use* | 0 | 1 | 0 | 1 | *Cosmetic Problem* |
| *Aesthetic and minimalist design* | 3 | 3 | 0 | 2 | *Minor* |
| *Help and documentation* | 1 | 1 | 0 | 1 | *Cosmetic Problem* |

It can be seen that there are 2 (two) problems that have a safety rating of 0.67, where the problem is included in the safe category or no problem, there are 3 (three) problems that have a severity rating of 1, where the problem is included in the cosmetic problem category which means that the problem in the system does not affect the user. In the average severity rating value, there is also an aspect that has a value of 2, where the problem is included in the minor category, namely a problem that needs to be fixed but with low priority.

### *4.4.2 Research Result Recommendations*

This section provides recommendations that can be used as a reference for future improvements based on the results of the method.

Heuristic Evaluation with cosmetic problem and minor categories which can be seen in Table 4.9:

4.9 Research Result Recommendations

| No. | Problem Description | Heuristic Aspect/ CriteriaNielsen | Recommendation |
|---|---|---|---|
| 1. | Public service information, it does not have the same circle as other menus, the navigation profile icon is inconsistent, some icons use the filled style and some use the... using outline style. | *Consistency and standards, learnability, memorability* | It is best to pay attention to the consistency of content or features between one page and another so that each page is easy to learn or use. |
| 2. | The display of the number of viewers of the news navigation is not the same as the FAQ, inconsistent in the selection of the words "password" and "password", inconsistent spacing on the login form, and inconsistent membership status information between that found on the home page menu and the data. | *Consistency and standards, errors* | Pay attention to the consistency of each page, starting from the field style, word choice, spacing, and valid information in each content. |
| 3. | There are several invalid error messages, one of which is when entering the NIK or name, an error popup still appears even though the data is correct. | *Recognition rather than recall, Errors* | Adjust the menu so that it is more highlighted, especially menus that are frequently used by users, adjust the color so that the text can be read clearly and the information can be... delivered |
| 4. | It doesn't have any help features and sufficient documentation, the service menu and data changes must have clear usage documentation. | *Help and documentation* | Clarify icons or highlight and complete the help service features and usage documentation, especially in the service registration and data change menus. |
| 5. | The logo on the home page, the field label on the login page, has poor color contrast, excessive use of shadows on the banner. | *Aesthetic and minimalist design* | Make the required content effective, pay attention to the complexity of each menu, pay attention to the contrast between the page color and the content so that the information is still conveyed, pay attention to typography and the neatness of the content. |
| 6. | There is a user address editing feature that is not given the correct writing information, the logout feature on the profile menu is the same as other sub-features. makeaccident the user made an error. | *Error prevention* | Provide clear information when filling out the form, provide popupConfirmation when logging out and distinguishing feature outline styles *logout*Foravoid accidents. |
| 7 | The x mark on the pop up image cannot be clicked, so the user must click outside the area to close the pop up. | *User control and freedom* | The x mark should be clickable to close the pop up. |
| 8 | Some websites do not redirect, it says “This site can't be reached” “ | *Recognition rather than recall, Errors* | It is better if the website that cannot be displayed is given a clear message so that the user understands why the website cannot be opened. Is it still "under maintenance" or "under development" |
| 9 | There is no error message when the searched keyword is not found. | *Recognition rather than recall, Errors* | It is better to display an error message to inform the user that the keyword they are searching for was not found. |

| | | | |
|---|---|---|---|
| 10 | *Search bar*on the menu tab when clicked closes all screens | *Consistency and standards, errors* | It is better if the search bar style when clicked does not cover the screen. It would be better if it is aligned between the description and the menu tab so that it is more pleasing to the user's eye. |
| 11 | The size of the images used is not appropriate so many images are not symmetrical | *Aesthetic and minimalist design* | It is better to standardize the image sizes used for better display. |
| 12 | The Image quality used is not good enough do it id s bit blury | *Aesthetic and minimalist design* | It is best to use HD image quality, so that the image displayed is not broken. |
| 13 | The Image in the pop up not symestrical in size | *Aesthetic and minimalist design* | It is better to adjust the image size to the pop up size so that it looks better. |

Table 4.9 explains the results of the improvement recommendations obtained from the usability evaluation in this study. It is hoped that the improvement recommendations can be applied in the development of the Ciamis Regency Communication and Informatics Service (DISKOMINFO) website so that in the future the website can improve the quality of usability received by users very easily.

## 5. CONCLUSION AND SUGGESTIONS

### *5.1 Conclusion*

Based on the research conducted, it can be concluded that the level of application usability can be measured using the Heuristic Evaluation method. The conclusions of this study are:

1. Based on the results of the study of measuring the level of application usability using the heuristic evaluation method, 24 problems were found by 3 evaluators. Based on the findings of problems in each heuristic aspect, there are 5 aspects that have the highest problems with an average of 4 in the minor category, namely Visibility of system status, Consistency and standards, Help user recognize, diagnose, and recover from error, Recognition rather than recall, Aesthetic and minimalist design, 3 aspects have a severity rating of the cosmetic problem level, namely User control and freedom, flexibility and efficiency of use, and help and documentation and only 2 aspects are categorized as having no problems, namely Match between system and the real world and Error prevention.
2. Based on the evaluator's assessment of the website's usability level measurement using the heuristic evaluation method, in the aspect of Visibility of system status, there is no error message when the keyword being searched for does not exist. Some websites do not redirect, "This site can't be reached" appears. Error messages still appear even though the user has filled in the form.login page, in the aspect of User control and freedom, The x mark on the pop up image cannot be clicked, so the user must click outside the area for the pop up to close, in the aspect of Consistency and standards The spacing used is inconsistent so that there are some texts that are not evenly placed and the Search bar used is not the same between the dashboard and the description, Inconsistent text highlight color, there is text that uses black as a highlight, Inconsistent spacing on the registration form, Error message on the NIK field is truncated so that it does not comply with information standards, in the aspect of Help user recognize, diagnose, and recover from error There is no error message when the keyword being searched for does not exist. So that users will be confused, Some websites do not redirect. And do not use the appropriate Info message, Error message on the NIK field is truncated so that it does not comply with information standards, in the aspect of Recogniti on rather than recall, Error message still appears even though the user has filled in the form on the login page. Poor color contrast on the label field causes the text to be unreadable on the login page. in the aspect of Aesthetic and minimalist design, Too many templates and colors are used so that it does not show a minimalist design The size of the image used is not appropriate so that many images are not symmetrical The search bar on the menu tab when clicked closes all layers, The quality of the image used is not good so it is a little blurry, The image on the pop up is not symmetrical in size, Poor color contrast in the label field causes the text to be unreadable on the entry page, in the aspect of Help and documentation Some information is not documented, so users do not get information from the clicked tab. For example in the public service information menu and service information.
3. Based on the findings of the problems found, the researcher provides recommendations to improve the usability of the Ciamis Regency Communication and Informatics Service (Diskominfo) website in the future. The recommendations given are focused on improving functionality and information in the minor heuristic category, namely Visibility of system status, Consistency and standards, Help user recognize, diagnose, and recover from error, Recognition rather than recall, Aesthetic and minimalist design, and the cosmetic problem heuristic category, namely User control and

freedom, flexibility and efficiency of use, and help and documentation.

### *5.2 Suggestions*

The discussion that has been explained has resulted in several suggestions related to this writing that can be considered by various parties, including the following:

1. Based on the results that have been concluded, the website management of the Ciamis Regency Communication and Information Service (Diskominfo) needs to pay attention to things that need to be fixed in terms of application usability, considering that there are still several indicators that get a score of low. Service quality can meet user expectations by conducting regular evaluations on the application and making continuous improvements with various new strategies and innovations.
2. As for suggestions for further research, namely by usingrecommendations in the form of a prototype or questionnaire by paying attention to the aspects being studied, then the prototype or questionnaire is tested for usability to determine whether the recommendation has an influence or not.

## BIBLIOGRAPHY


[1] Firda Dewi, Yonathan Handarkho, Felciaveronica (2022). Usability Analysis Using the Heuristic Evaluation Method and Web Usability Evaluation Tool on the ACC Career Website, Buana Informatika Journal. 7(2), 126–135.

[2] Usability Testing Using Heuristic Evaluation Method on E-Musrenbang Application of Bappeda Badung Regency. 16(1), 2541-0652.

[3] Aisya Rizki Hasnanursanti, Buce Trias Hanggara, Andi Reza Perdanakusuma (2022). Usability Analysis of the Official Website of the Surakarta City Government Using the Heuristic Evaluation Method, 6(2)

[4] Bella Aulia M, M. Chandra Saputra S.Kom., MT, M.Eng, Aryo Pinandito ST, M.Mt, Usability Analysis on Brawijaya University Website Using Heuristic Evaluation, Journal of Information Technology and Computer Science (JTIIK) Vol. 3, No. 3, September 2016, 188-193

[5] Nielsen, J., & Molich, R. (1990). Heuristic Evaluation of User Interfaces. Association for Computing Machinery

[6] Nielsen, J. (1993). Usability Engineering. California: Academic Press.

[7] Rachman, AN, Dewi, ENF, Maulana, RA, & Nurdin, AM (2022). Usability Evaluation of SIMAK Universitas Siliwangi Using Heuristic Evaluation Approach and Webuse Approach. Informatics Engineering Journal, Vol. 3 No. 4,983–991.https://doi.org/https://doi.org/10.20884/1.jutif.2022.3.4.218

[8] Nurisman, ML, & Mayesti, N. (2020). Evaluation of the Usability of the University of Indonesia Library Website Using the System Usability Scale. Journal of Documentation and Information, Vol. 2 No. 2, 253–269. https://doi.org/https://doi.org/10.14203/j.baca.v41i2.622

[9] Nurhadryani, Y., & Sukoco, H. (2014). Development and Usability Testing of Student Attendance and Exam Score Monitoring Management Information System. http://journal.ipb.ac.id/index.php/jika

[10] Nurisman, ML, & Mayesti, N. (2020). Evaluation of the Usability of the University of Indonesia Library Website Using the System Usability Scale. Journal of Documentation and Information, Vol. 2 No. 2, 253–269.https://doi.org/https://doi.org/10.14203/j.baca.v41i2.622

[11] Amalia Oktafina, Febiyanti Arifatul Jannah, Muchammad Fahur Rizky, Muhammad Verrel Ferly, Yansen Dharma Tangtobing, Sri Rahayu Natasia (2021). Website Usability Evaluation Using the Heuristic Evaluation Method Case Study: (Website of the Public Works Department of Xyz City). Scientific Journal of Informatics Engineering, Vol. 15 No. 2 November 2021, pp. 134-146

[12] Heraspati Yudha Pratama, Buce Trias Hanggara, Nanang Yudi Setiawan (2022). Usability Evaluation by Applying the Heuristic Evaluation Method on the Website of the Batu City Education Office
Journal of Information Technology and Computer Science Development e-ISSN: 2548-964X Vol. 6, No. 3, March 2022, pp. 1350-1359

[13] P. Krisnayani, IKR Arthana and IGM Darmawiguna (2016). Usability Analysis on UNDIKSHA Website Using Heuristic Evaluation Method, Collection of Articles by Informatics Engineering Education Students (KARMAPATI), vol. 5, no. 2, 2016.

[14] IGAAD Indrayani, IPA Bayupati and IMS Putra (2020). Usability Analysis of iBadung Application Using Heuristic Evaluation Method. Jurnal Ilmiah Merpati, vol. 8, no. 2, pp. 89-100, 2020

[15] U. Ependi, TB Kurniawan and F. Panjaitan (2019). System Usability Scale VS Heuristic Evaluation: A Review, Simetris Journal of Mechanical Engineering, Electrical Engineering and Computer Science, vol. 10, pp. 65-74, 2019.

[16] AP Hendradewa (2017). Comparison of Usability Evaluation Methods (Case Study: Smartphone Device Usage), Teknoin, vol. 23, no. 1, pp. 09-18, 2017.

[17] MGL Putra, NR Sabilla and SR Natasia (2020). Usability Evaluation of Prokal.Co Online News Website Using Heuristic Evaluation and Webuse, Journal of Information Technology and Computer Science (JTIIK), vol. 7, no. 5, pp. 911-922, 2020.

[18] A. Koohang (2004), Expanding the Concept of Usability, Informing Science Journal, vol. 7, 2004.

[19] J. Nielsen and R. Molich (1990), Heuristic Evaluation Of User Interfaces, in CHI '90: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, Seattle, 1990.

[20] YM Geasela, P. Ranting and JF Andry (2018). User Interface Analysis of E-Learning Based Websites with Heuristic Evaluation Method, Jurnal INFORMATIKA, vol. 5, no. 2, pp. 270-277, 2018.

[21] J. Ardhiyani and AM Bachtiar, Analysis of User Interface of Learning Media for Vocabulary Introduction for Deaf Children, Scientific Journal of Computer and Informatics (KOMPUTA). TK Ahsyar and D. Afani (2019), Evaluation of Usability of Online News Website Using Heuristic Evaluation Method, Scientific Journal of Engineering and Management of Information Systems, vol. 5, pp. 34-41, 2019.