Usability and Display Evaluation of Job Vacancy Platform (Website X and Website Y)

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Abstract

One of the impacts of the COVID-19 pandemic is the delay in face-to-face activities, one of which is the delay in holding job fair event. The reduction in the implementation of offline job fairs has encouraged job seekers to seek work through online media. Website X and Website Y are examples of websites used to find jobs online. With the current increase in find jobs through Website X and Website Y, the usability and display of their website need to be evaluated. Usability and display evaluation aims to identify usability problems and correct these problems, to increase the usability of a design. The objective of this study is to find out whether there is a significant difference of the time needed to find job vacancy between Website X and Website Y website, to find out whether there is a significant difference of the time needed to find job vacancy between male and female on both Website X and Website Y website, and to find out user perspective on both Website X and Website Y website related to system aspects, user aspects, and interaction aspects by using usability questionnaire. The advantage of this research is that it can help website developers by pointing out areas that require development or improvement. Other than that, this study might provide suggestions for job vacancy websites that are more user-friendly. Based on the results of the study it was found that Website X and Website Y had problems related to user perceptions of the safety of using the website, user comfort with using colors on the website, and the user's ability to remember menus and website appearance. The results also show that there is a significant difference between the time needed to carry out activities on Website X and Website Y.

Keywords: *Display, job, usability, website*

1. INTRODUCTION

Indonesia is one of the countries affected by the ongoing Corona virus 2019 (COVID-19) pandemic throughout the world. This disease is caused by the SARS-CoV-2 virus (Yunus and Rezki, 2020). The positive case of COVID-19 in Indonesia itself was detected for the first time on March 2 2020. The COVID-19 pandemic has hampered several face-to-face activities, one of which is job fair activities. A job fair is a place where the company's Human Resource and Development (HRD) and job seekers meet in one place. Fortunately, currently job vacancy advertising information services are very easy to find on online media. With technology, it makes it easier for companies to recruit employees online with e-recruitment. According to In Marwansyah (2012), e-recruitment is a practice and activation carried out by organizations by utilizing various electronic means to fill vacant positions or positions effectively and efficiently. Information on job vacancy advertisements can be posted on social media or websites, for example Website X and Website Y.

According to Widiantoro (2020) Website X is a leading provider of job vacancy information in Asia which was founded in 1997 in Malaysia. The company acts as a facilitator of job matching and communication between job seekers and employers, in Malaysia, Philippines, Singapore, Indonesia and Vietnam. Website X's vision is to connect business with talent and improve lives through better careers. Meanwhile, Website Y is a career development and recruitment platform in Southeast Asia which was founded in 2013 in Singapore. Media job search online is used by many people. Therefore, the media must be able to meet the needs and be comfortable for use by users.

With the current increase in e-recruitment, user interface need to be user friendly, easy to learn, and easy to use so that computer use is more effective and efficient. Usability is related to the

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level of ease, understanding, use and effectiveness of a software or system. Usability plays an important role in user interface design. Therefore, a high level of usability is very important in designing software interfaces. Usability and display evaluation is a part that must be done in designing software, especially user interfaces where humans currently interact with computers, especially in this research is for user to find a job. Usability and display evaluation aims to identify usability problems and correct these problems, so as to increase the usability of a design. Interface design with good usability will help users carry out their activities (Tjandra, 2011). For this reason, The objective of this study is to find out whether there is a significant difference of the time needed to find job vacancy between Website X and Website Y website, to find out whether there is a significant difference of the time needed to find job vacancy between male and female on both Website X and Website Y website, and to find out user perspective on both Website X and Website Y website related to system aspects, user aspects, and interaction aspects by using usability questionnaire.

2. MATERIAL AND METHODS

The research was conducted by experimenting with carrying out several tasks on Website X and Website Y which were then followed by filling out a questionnaire. The sample of this study were 12 student, which are 6 women and 6 men. Sample selection was done by purposive sampling. Purposive Sampling is a Nonprobability Sampling Techniques that a researcher uses to choose a sample of subjects/units from a population. Although nonprobability sampling is not a good representative of the population due to several weaknesses coming from its subjective sample selection process, it can nevertheless be useful in situations where randomization is not feasible, such as in very large populations. When a researcher is working with limited funds, time, or staff, it may be helpful. It can also be applied in situations when the goal of the study is not to produce findings from which broad generalizations about the population can be made (Etikan et al., 2016). Consequently, nonprobability sampling approaches must be used.

This research was carried out during the pandemic and had to be completed within 2 weeks, so researchers had limited space, relations, and time in determining research subjects. Therefore, this research only examined 12 research subjects which are have final semester student as their backgrounds during the pandemic. Those samples were selected because after completing their education, they will look for job vacancy through online. Therefore, this study was done by purposive sampling with limited respondent.

In collecting data, respondent were asked to perform several tasks on Website X and Website Y. The web order used by each respondent was randomized to avoid bias from the learning effect. The time required for each respondent to complete each task was measured using a stopwatch. The following is the task performed. This section should explain how the research was conducted. It should be detailed to describe the procedure. The given tasks for the respondent shown in the Table 1.

Table 1. Tasks given to the respondent

Number	Task
1	Looking for job vacancy in Jakarta
2	Filter jobs that have been found with a minimum salary of IDR 1,000,000.00.
3	Filter job type into Internship
4	Filter by job vacancies that have been found in the last 7 days
5	Filter the job vacancies found by the most recent date.

After completing the tasks on both sites, respondents were asked to fill out a usability questionnaire. Usability is a qualitative analysis of how easy it is for users to use the interface of an application. An application is called usable if its functions can be carried out effectively, efficiently and satisfactorily (Firmansyah, 2018). The questionnaire consists of 11 questions that assess system aspects, user aspects, and interaction aspects. Each question is scored by using likert scale, on a scale of 1 to 5. The interpretation of each scale shown in Table 2, and the questions used for the questionnaire shown in Table 3.

Table 2. Likert scale interpretation

Scale	Meaning
1	Strongly Disagree
2	Disagree
3	Neither Agree or Disagree
4	Agree
5	Strongly Agree

Table 3. Questions on the Questionnaire

Aspect	Number	Question
System Aspects	1	Is the website interface easy to recognize?
	2	Is the website easy to operate?
	3	What is the color display on the website comfortable to look at and not boring?
User Aspects	4	Is the menu display on the website easy to recognize?
	5	Is the information on the website easy to find?
	6	Is the writing easy to read?
	7	Are the existing symbols, icons and images easy to understand?
Interaction Aspects	8	Is it easy to access the information offered?
	9	Are the functions offered fit the purpose?
	10	Is the security of the website guaranteed?
	11	Is the menu and appearance of the website easy to remember?

Data of tasks completion time then used in the MANOVA test to determine whether there is a difference in processing time on Website X and Website Y, whether there is a difference in processing time between female and male respondents on Website X, and whether there is a difference in processing time for female and male respondents on Website Y. The results of the questionnaire are used to evaluate the usability of Website X and Website Y. The results of the assessment are also used to provide recommendations for display improvements at Website X and Website Y. Figure 1 shows the stages of the research.

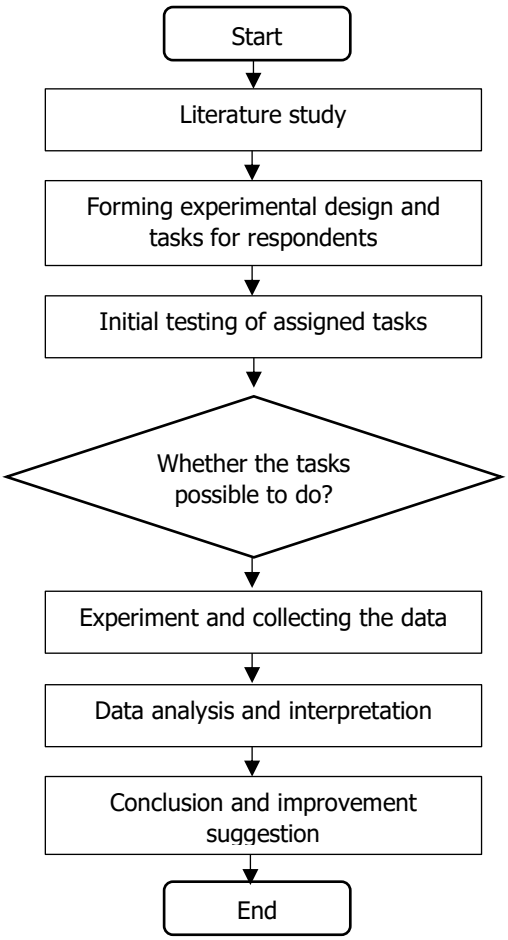

Figure 1. Research Stages

3. RESULTS AND DISCUSSION

3.1 Comparison of Task Completion Time of the Website X and Website Y Website

The data obtained from the experiment and questionnaire were tested using MANOVA. Task completion time on the Website X and Website Y Website shown in Table 4 and Table 5 respectively. Based on the MANOVA test results, the significance value of Pillai's Trace, Wilks' Lambda, Hotelling's Trace and Roy's Largest Root was 0.007. This value is less than 0.05 so it can be concluded that there is a difference in the time needed to complete tasks on the Website X and Website Y websites.

The significance value obtained in the Tests of Between-Subjects Effect for task 1 was 0.692, task 2 was 0.009, task 3 was 0.669, task 4 was 0.279 and task 5 was 0.525. sig. value Tasks 1, 3, 4 and 5 are more than 0.05 so there is no difference in time to complete tasks 1, 3, 4 and 5 on the Website X and Website Y websites. The sig value on task 2 is less than 0.05 so it can be concluded that there is a difference in time to complete task 2 on the Website X and Website Y websites.

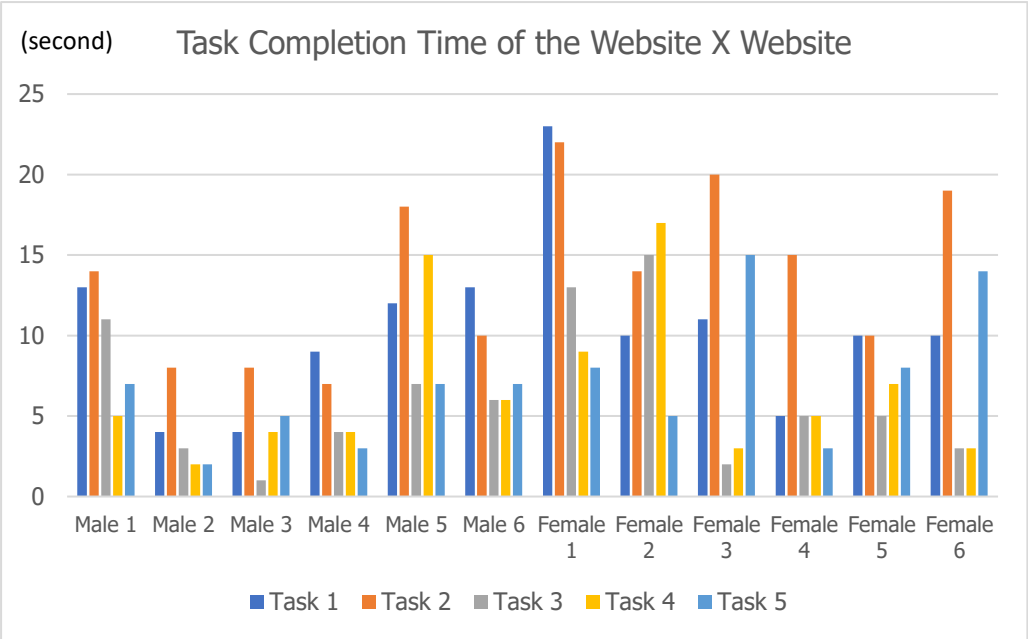

Figure 2. Task Completion Time of the Website X Website

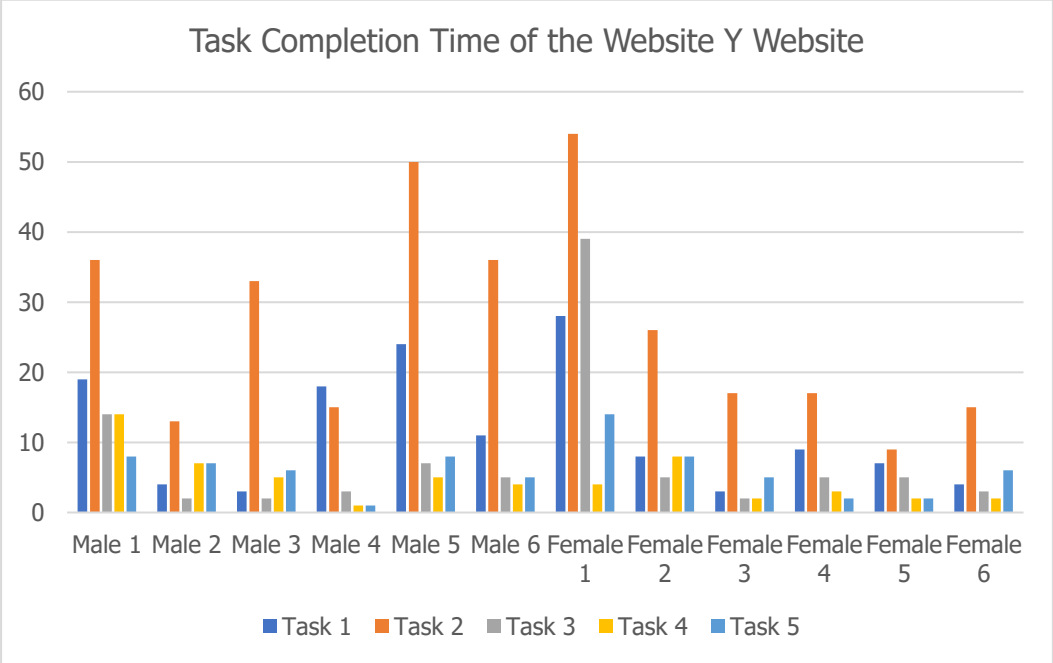

Figure 3. Task Completion Time of the Website Y Website

Task 2 is to filter a minimum salary of IDR 1,000,000.00. Based on descriptive analysis, the average time needed to complete task 2 on the Website Y website is 26.75 seconds while on Website X it is 13.75 seconds. Respondents spent more time on the Website Y website to complete task 2. This is because the salary filter is located at the bottom of the website, making it difficult for users to find it. Users must scroll down the website first. In addition, another factor that makes it long is that on the Website Y website, users must first select a currency, then the website will reload the search page, only then can users enter the specified minimum salary value.

3.2 Comparison of Task Completion Time of Male and Female on the Website X Websites

Based on the experimental results on 12 student consisting of 6 males and 6 females (see Table 4 and Table 5), the Manova Test was carried out with SPSS to see the effect of gender on the user's ability to search for certain features on Website X website. Then obtained a significance value of Pillai's Trace, Wilks' Lambda, Hotelling's Trace and Roy's Largest Root of 0.052. This value is more than 0.05 so it can be concluded that there is no significant difference in the time needed by male and female users in completing tasks on the Website X website.

The significance value obtained in the Tests of Between-Subjects Effect for task 1 was 0.457, task 2 was 0.044, task 3 was 0.504, task 4 was 0.651 and task 5 was 0.120. sig. value Tasks 1, 3, 4, and 5 are more than 0.05 so there is no significant time difference for male and female Website X users to complete tasks 1, 3, 4, and 5 on the Website X website. However, in task 2, a significance value of less than 0.05 was obtained so that there was a significant time difference between male and female users in carrying out the task.

Based on the results of all analyzes, it can be concluded that there is no difference in the average duration of time between male and female users for the five types of tasks provided on the Website X website. This shows that the display on the Website X website does not make a significant difference to male and female users in finding a job, determining the appropriate salary, looking for a certain type of job, displaying vacancies within a certain period of time, and sorting them based on the latest date.

3.3 Comparison of Task Completion Time of Male and Female on the Website Y Websites

Based on the experimental results on 12 student consisting of 6 males and 6 females (see Table 4 and Table 5), the Manova Test was carried out with SPSS to see the effect of gender on the user's ability to search for certain features on Website Y website. The MANOVA test was conducted to determine whether there were differences in working time between men and women when using the Website Y website. Based on the MANOVA test results, the significance value of Pillai's Trace, Wilks' Lambda, Hotelling's Trace and Roy's Largest Root was 0.523. With a significance value greater than 0.05, it can be concluded that there is no difference in task processing time between men and women in using the Website Y website.

The significance value obtained in the Tests of Between-Subjects Effect for task 1 was 0.531, task 2 was 0.411, task 3 was 0.497, task 4 was 0.246 and task 5 was 0.879. With a significance value greater than 0.05, there is no difference in completing tasks 1, 2, 3, 4, and 5 for male and female respondents when using the Website Y website. This shows that both men and women can complete work with no significant time difference when using the Website Y website.

3.4 Usability Evalution of Website X Website by Questionnaire

After completing the tasks on both websites, respondents were asked to fill out a usability questionnaire. The questionnaire consists of 11 questions that assess system aspects, user aspects, and interaction aspects. Each question is scored by using likert scale, on a scale of 1 to 5. The result of the questionnaire shown in the Table 6. Based on the results of the Website X usability assessment questionnaire, it was found that questions 3, 10, and 11 had the lowest average score of 3.7; 3,4; and 3,6. The 3rd question is "Is the color display on Website X comfortable to look at and not boring?" then the 11th question is "Is the Website X menu and appearance easy to remember?". It can be seen that this is related to the display on the website.

According to Trapsilawati (2021a), the displayed display must include 13 display principles. To be able to make a display that is easy to remember and a color that is easy on the eyes, one of the principles that can be applied is the discriminability principle. The principle of Discriminability is a principle that avoids similarities in information or stimuli that can confuse recipients, so that differences are given to clarify information (Trapsilawati, 2021a).

Table 4. Questionnaire Result of the Website X Website

Number of Question (see Table 3)	Average score
1	4.2
2	4.1
3	3.8
4	4.2
5	4.2
6	4.2
7	4.1
8	4.2
9	4.3
10	3.4
11	3.6

Apart from the Discriminability principle, another principle that should be applied is the Principle of Consistency. The Principle of Consistency is a principle that designs displays in a way that is consistent with other views that users may see simultaneously or may have felt in the past (Trapsilawati, 2021a), for example the red color indicates danger and the green color indicates something safe.

Then the 10th question is "Is Website X safe?" also get low scores from respondents. This shows that users feel less secure when providing personal information to the Website X website. According to Trapsilawati (2021b) this can be overcome by applying the Provide Feedback principle. The Provide Feedback principle is a principle that suggests providing feedback when the user takes an action (Trapsilawati, 2021b). In this case, the Website X website should provide feedback in the form of a statement guaranteeing the security of data and personal information when users enter their personal data.

3.5 Usability Evalution of Website Y Website by Questionnaire

Based on the results of the Website Y usability assessment questionnaire, it was found that questions 10, 11, 2, and 3 had the lowest average scores, namely 3.5 respectively; 3.7; 3.8; and 3,8. The 10th question is "Is the security of Website Y guaranteed?". The low rating on this question indicates that users do not feel safe when using the Website Y website. This feeling of discomfort can be caused by problems with leakage of personal data or related to existing vacancies, whether genuine or fake. The principle that can be applied to deal with this is Provide Feedback which can be realized with a statement guaranteeing the security of data and personal information when users enter personal data.

Questions 11 and 3 relate to website display. The 11th question is "Is the Website X menu and appearance easy to remember?" and the 3rd question is "Is the color display on Website Y pleasing to the eye and not boring?". Just like the recommendations given for Website X, the Website Y website also needs to pay attention to the principles of Discriminability and the Principle of Consistency. To apply the Discriminability principle, Website Y can provide different icons on its menus so that users can easily remember the existing menus and distinguish one menu from another. To apply the Principle of Consistency, the use of icons, colors and layouts can be adjusted to standards that are widely recognized by users. By using color choices that many users recognize, it is hoped that users will be more comfortable with the colors used in Website Y.

Table 5. Questionnaire Result of the Website Y Website

Number of Question (see Table 3)	Average score
1	4.0
2	3.8
3	3.8
4	4.1
5	4.0
6	3.9
7	3.9
8	4.0
9	4.2
10	3.5
11	3.7

The 2nd question is "Is Website Y easy to operate?". The low score on this question indicates that users still have difficulty operating Website Y. The appearance of the Website Y website is quite complex because all available options or features are immediately displayed on the left side of the website. Users tend to get confused when they see many features and options at one time. Therefore it is necessary to make improvements with the Avoid Crowding of Display Elements principle. Sometimes designers are tempted to create a display by placing too much information in a limited space. This can reduce the readability of the display (Wickens, et al, 2013). It is better to eliminate which features will be displayed so that users have no trouble operating the Website Y website.

3.6 Improvement Suggestion

According to Trapsilawati (2021a), the displayed display must include 13 display principles. To be able to make a display that is easy to remember and a color that is easy on the eyes, one of the principles that can be applied is the discriminability principle. The principle of Discriminability is a principle that avoids similarities in information or stimuli that can confuse recipients, so that differences are given to clarify information. By applying this principle, users could find the information more conveniently and easily.

Apart from the Discriminability principle, another principle that should be applied is the Principle of Consistency. The Principle of Consistency is a principle that designs displays in a way that is consistent with other views that users may see simultaneously or may have felt in the past (Trapsilawati, 2021a), for example the red color indicates danger and the green color indicates something safe.

Based on the questionnaire result, it can be seen that users feel less secure when providing personal information to the Website X website. According to Trapsilawati (2021b) this can be overcome by applying the Provide Feedback principle. The Provide Feedback principle is a principle that suggests providing feedback when the user takes an action (Trapsilawati, 2021b). In this case, the Website X website should provide feedback in the form of a statement guaranteeing the security of data and personal information when users enter their personal data.

Both Website X and Website Y website also needs to pay attention to the principles of Discriminability and the Principle of Consistency. To apply the Discriminability principle, both website can provide different icons on its menus so that users can easily remember the existing menus and distinguish one menu from another. To apply the Principle of Consistency, the use of icons, colors and layouts can be adjusted to standards that are widely recognized by users. By using color choices that many users recognize, it is hoped that users will be more comfortable with the colors used.

On the other hand, this study found that users tend to get confused when they see many features and options at one time. Therefore it is necessary to make improvements with the Avoid Crowding of Display Elements principle. Sometimes designers are tempted to create a display by placing too much information in a limited space. This can reduce the readability of the display (Wickens, et al,

2013). It is better to eliminate which features will be displayed so that users have no trouble operating the website.

4. CONCLUSIONS

Based on the experimental results, we found that there is a significant difference between the time needed to carry out activities on Website X and Website Y. The activity that has a significant difference in processing time between Website X and Website Y is filtering jobs based on salary, where the average time needed at Website Y is longer than Website X. Then, for both Website X and Website Y, overall there was no significant difference in the time to complete work between men and women.

Based on the results of the Website X and Website Y usability evaluation questionnaire, it was found that both of them had problems with the user's perception of the safety of using the website, the user's comfort with using colors on the website, and the user's ability to remember menus and website appearance. This problem can be overcome by applying the principles of Discriminability, Principle of Consistency, and Provide Feedback.

In addition to the three problems above, Website Y has problems with ease of operation, where users still have difficulty operating Website Y. To overcome this, Website Y can reduce website complexity by applying the Avoid Crowding of Display Elements Principle.

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