

Usability Testing on Desktop-based Operating Systems with University Users

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Abstract

The operating system is the most important computer system software. Currently, there are several operating systems that are so popular, including Windows and MacOS. Usability measurements were made between the Windows and MacOS operating systems. This study aims to measure the comparison of usage between Windows and Mac operating systems in lectures at Manado State University. In this study using a questionnaire with 13 questions asked and 25 respondents received, then analyzed the data using a Guttman measuring scale. The results show that the Windows operating system is more widely used with a much higher percentage than MacOS. The results of this study also prefer the Windows operating system with 84.61% while MacOS with 11.38%. Because from the point of view of popularity among Manado University students, many use Windows because it is considered easier and the applications provided for free are different from the prepaid MacOS..

Keyword : *Operating system, Windows, MacOS, Usability, UNIMA*

Introduction

An operating system is a set of programs that manages computer hardware resources, and provides common services for software applications. The operating system is the most important type of system software in a computer system. Without an operating system, users cannot run application programs on their computers, except for boot application programs. The operating system has a systematic schedule that includes calculating memory usage, data processing, data storage, and other resources. Examples of modern operating systems are Linux, Android, iOS, Mac OS X, and Microsoft Windows.

According to Dony Ariyus (2010:137) "Windows is one of the operating system software released by the Microsoft Inc. company. Microsoft Windows is the most popular information system software for PC users. The "user friendly" Windows interface makes it the first choice. Macintosh is the name of a computer made by Apple Inc. Unlike Windows, which is commercially available and can be installed on almost any brand of computer, Mac OS can only be legally installed on Apple Macintosh computers. Every new purchase of an Apple computer will automatically get Mac OS along with several built-in applications (iLife Suite, Comic Life). Operating system security is part of the total computer system security problem. Computer system security is to ensure that resources are not used or modified by unauthorized persons.

Usability comes from the word usable which generally means it can be used well. Something can be said to be useful if failures in its use can be eliminated or minimized and provide benefits

and satisfaction to users. To measure usability depends on the ability of the user to complete a series of tests. Some parameters to measure Usability include:

- 1) Success Rate, measures the level of success of users in completing all "tasks" on a website.
- 2) The Time a Task Requires, measuring the time required by a user to complete a "task" on the website.
- 3) Error Rate, the level of errors made by users when completing "tasks" on the website.
- 4) User's Subjective Satisfaction, the level of user satisfaction in completing the entire "task" when interacting on the website.

This study aims to measure the comparison of usage between Windows and Mac operating systems in lectures at Manado State University. One of the questionnaire packages that can be used to measure usability is USE. USE can cover 3 aspects of usability measurement according to ISO, namely efficiency, effectiveness and satisfaction. Several studies that have been conducted show that most product evaluations refer to these three dimensions, namely usefulness, satisfaction and ease of use[6].

Method

Method of collecting data

Data collection method is an important aspect in this research because of its role in the smoothness and success of a research. In this study, the data collection method was carried out by distributing questionnaires or questionnaires through survey media to obtain data. The form of questions is multiple choice (multiple choice questions). An open questionnaire is a questionnaire whose questions or statements give freedom to respondents to provide answers and opinions according to their wishes. In the questionnaire, the data is calculated using the Guttman Scale. The Guttman scale is a scale used to obtain answers from respondents that are clear (firm) and consistent. This scale only has two scores, namely a score of 1 for a question or statement that supports and a score of 0 for a question or statement that does not support.

The data collection in this study, namely to see the usability comparison between the Windows and MacOS operating systems for UNIMA students, was carried out in the following way:

- 1) Make a questionnaire to be distributed to students.
- 2) Taking data samples from students through distributed questionnaires.
- 3) Measuring usability based on data from students regarding the two operating systems so as to get a comparison.

Data analysis

After the data in the form of questionnaires are filled in and collected, the data processing steps will be carried out as follows:

- 1) A data check (questionnaire) was conducted to determine how much data was collected.

- 2) After the data is obtained, we will begin to calculate the percentage of measurements through the answers given by the respondents.
- 3) To calculate the percentage of respondents' answers, we use the Guttman scale measurement by: $\text{Total Average} / \text{Number of Respondents} \times 100\%$
- 4) The results of the above data processing will determine the percentage of usability of the two operating systems among UNIMA students.

Results and Discussion

In this study, researchers used google form as a media questionnaire to students at Manado University containing 13 questions. Questionnaires that have been distributed are then filled out by users based on their experience when using Windows and MAC operating systems. In analyzing the data, the researcher used the Guttman scale gauge.

$$\frac{\text{Jumlah Rata-rata}}{\text{Jumlah Responden}} \times 100\%$$

Table 1. Measurement Percentage

Question	Answer 1 = Windows	Answer 0 = MacOS
P1	24	1
P2	18	7
P3	23	2
P4	23	2
P5	23	2
P6	24	1
P7	23	2
P8	19	6
P9	22	3
P10	23	2
P11	23	2
P12	21	4
P13	22	3
Amount	288	37
Average	22.15	2.84

Calculating Percentage Formula:

$$\frac{\text{Jumlah Rata-rata}}{\text{Jumlah Responden}} \times 100\%$$

Windows Percentage:

$$\frac{22.15}{25} \times 100\% = 88.61\%$$

MacOS Percentage :

$$\frac{2.84}{25} \times 100\% = 11.38\%$$

So from the results of this measurement, it was found that the respondents preferred the Windows operating system with 88.61% rather than using MacOS with 11.38%.

Conclusion

From the data collected above, calculations were made where respondents preferred the Windows operating system with 84.61% while MacOS with 11.38%. Because from the point of view of popularity among Manado University students, many use Windows because it is considered easier and the applications provided for free are different from the prepaid MacOS. However, there are some who choose MacOS because it is considered to have an elegant interface and a strong security system. In using the operating system, let us pay attention to the needs that are the main thing for users and the ease of use, not forgetting to also pay attention to the security of data from the user. In today's modern era, most users are more concerned with convenience than security.

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