

## USABILITY ANALYSIS OF CAMSCANNER APPLICATIONS USING THE SYSTEM USABILITY SCALE (SUS) METHOD

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### ABSTRACT

In the current digital era, technology has transformed the way we work and interact with the world around us. One significant development is the ability to convert physical documents into a digital format using scanning applications. One popular application for this task is CamScanner. This research aims to measure the CamScanner application's usability level using the System Usability Scale (SUS) analysis. The research method is a quantitative descriptive approach, aiming to provide a structured, accurate, and up-to-date understanding of the researched object. Data collection was conducted using a questionnaire created with Google Forms and distributed to 30 respondents. The findings of this research indicate that the CamScanner application exhibits usability with an acceptability level of "Acceptable," a grade of "B," and an adjective rating of "Good." This conclusion is based on calculating the average questionnaire score, which yielded a value of 74.2.

Keywords: CamScanner, System Usability Scale, Usability

### 1 INTRODUCTION

In today's digital era, technology has changed the way we work and interact with the world around us. Advances in information technology are beneficial in improving performance and enabling various activities to be carried out quickly, precisely, and accurately, which in turn will increase productivity [1]. One of the important developments is the ability to convert physical documents into digital form using scan applications or scanners. One popular application for doing this task is CamScanner.

CamScanner is a mobile application that is used to scan objects such as images, and reports and convert them into a digital format [2]. The CamScanner application has been downloaded by more than 100 million users on the Play Store and received a rating of 4.8/5.0 and received more than 3 million reviews. CamScanner is developed by a company known as CamSoft Information. Using CamScanner, users can quickly scan essential documents such as receipts, letters, or business cards and access them anytime and anywhere. However, as with any other application or technology, it is important to ensure that using CamScanner is not only easy and convenient but also meets the needs and expectations of the user. Usability or usability level is one aspect that can be evaluated in an application. Evaluation is one of the efforts to develop and improve services [3]. Usability evaluation relates to the extent to which users can successfully learn and use the product to achieve their goals, as well as the extent to which users are satisfied with the processes involved in using the product to achieve their goals [4]. Usability evaluation is often used as a general method to measure the extent to which users can smoothly use and interact with the application.

Usability is a critical issue in the development of mobile application products [5]. Usability is a common method used to measure software quality based on user experience [6]. The term usability comes from the word "usable" which generally refers to the ability of a product or system to be used properly [7]. Usability is a qualitative analysis technique that indicates how easily a user can use an application [8]. In measuring usability, various techniques can be used, such as Heuristic

Evaluation and System Usability Scale. However, this study uses the System Usability Scale method to measure the usability of the CamScanner application.

The purpose of this research is to assess the usability level of the CamScanner application through analysis using the System Usability Scale (SUS). The System Usability Scale (SUS) is a method developed by John Brooke in 1986 and can be used to assess the usability of a product, including mobile applications. The SUS method is quite simple, uses a result scale from 0 to 100, and can provide a good understanding of the usability level of an application [9]. SUS consists of ten statements that must be answered by respondents, with answer options that vary from "strongly disagree" to "strongly agree" [10].

## 2 LITERATURE REVIEW

User Interface is a scientific discipline related to components of information systems that require interaction between the user and the system to perform input and output. The User Interface is not only limited to a screen display but is a series of graphic elements that can be understood by users when using the system, both conceptually and physically. The establishment of the User Interface aims to provide an easy and intuitive user experience in using this information technology [11].

CamScanner is a mobile application that functions as a scanner and portable file storage. This application has the ability to turn a mobile device with the Android operating system into a portable scanner, add watermarks, and PDF converters, lock PDFs, and share documents [12].

A mobile application is a type of application specifically designed for use on mobile devices such as cell phones or cell phones. This application allows users to carry out various activities on a mobile basis, including entertainment, commerce, learning, office work, browsing the internet, and so on, with great flexibility [13]. In mobile applications, it is closely related to UI/UX because it is an important issue in the usability of a product [14].

Usability or "usable" refers to good ease of use. The interaction between technology products and their users (end users) is carried out to assess the usability evaluation. In ISO 9241-11, there are three main aspects of usability [15], namely:

1. Effectiveness: Covers the user's ability to complete tasks and achieve their goals while using the system.
2. Efficiency: Assessing the degree to which users can achieve their goals efficiently using existing resources.
3. Satisfaction: Assess the level of satisfaction of users in achieving their goals and the level of comfort they feel during the process.

The System Usability Scale (SUS) is a method used to measure user satisfaction and involves the use of a questionnaire that has been prepared or is ready to be used for research purposes. SUS uses 10 questions using a 5-point Likert scale, including Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), and Strongly Agree (SA). The measurement results or scores obtained are then analyzed based on interpretation guidelines that have been determined by SUS [16].

## 3 RESEARCH METHOD

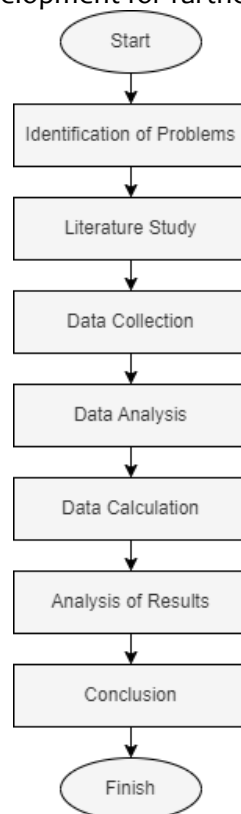
### 3.1 Types of Research

This study uses a quantitative descriptive method, which can provide a structured, accurate, and up-to-date description of the research object being studied [17]. The number of participants in this study consisted of 30 individuals. These 30 people are people who have installed and explored the features of the CamScanner application. This research consists of 7 stages which are depicted in Figure 1. The following is an explanation of each of these stages.

1. Identification of Problems

After obtaining the research background, the next step is to identify in more detail related to that background. This stage has an important role in determining the literature study, research methods, and research instruments to be used.

2. Literature Study  
In the literature review stage, the relevant literature is collected and examined, consisting of journal articles, previous research, and books related to the topic of usability.
3. Data Collection  
Data collection in this study used a questionnaire made with Google Forms, then the link was disseminated via chat and social media.
4. Data Analysis  
Data analysis in this study was carried out to obtain valid data. Therefore, the data is first analyzed by seeing whether it meets the criteria of respondents who have installed and explored the CamScanner application.
5. Data Calculation  
The calculation process was carried out based on the use of the SUS method in this study. The SUS method is one of the most commonly used methods for evaluating system usability and can be used to assess usability for various types of systems, including websites, mobile applications, and desktop applications.
6. Analysis of Results  
After getting the final results of the calculations, it is important to analyze the results to formulate conclusions in this study. Analysis of the results has an important role in continuing this research because it will provide a deeper and more comprehensive understanding of the findings and their implications.
7. Conclusion  
The final step after analyzing the results is concluding this research. These conclusions can become the basis and source of development for further research.



**Figure 1. Usability Analysis Research Stages on The CamScanner Application**

### 3.2 System Usability Scale (SUS) method

The instrument used in this study was a questionnaire consisting of 10 questions according to the usability evaluation guide using the System Usability Scale (SUS) method. The SUS questions used in this study can be seen in Table 1.

**Table 1. System Usability Scale Questions**

No	Question	Scale
1	I am thinking of using this CamScanner App again	1-5
2	I find CamScanner App complicated to use	1-5
3	I find this CamScanner App easy to use	1-5
4	I need help from other people or technicians in using this CamScanner App	1-5
5	I feel the features of this CamScanner App run properly	1-5
6	I feel that there are many things that are inconsistent (mismatched) on this CamScanner App	1-5
7	I feel others will understand how to use this CamScanner App quickly	1-5
8	I find this CamScanner App confusing	1-5
9	I feel there is no obstacle in using this CamScanner App	1-5
10	I need to familiarize myself first before using this CamScanner App	1-5

Respondents will give answers on a Likert scale consisting of strongly agree (SA) with a score of 5, agree (A) with a score of 4, neutral (N) with a score of 3, disagree (D) with a score of 2, and strongly disagree (SD) with a weight of 1. Information regarding answers using a Likert scale with five levels can be found in Table 2.

**Table 2. Likert scale**

Scale/Weight	Answer Options
1	Strongly Disagree (SD)
2	Disagree (D)
3	Neutral (N)
4	Agree (A)
5	Strongly Agree (SA)

In carrying out the calculations to determine the SUS score, weight is given to each item in the range 1-5. The following are the provisions for calculating SUS used:

1. For each question with an odd number, namely 1, 3, 5, 7, and 9 (questions that have positive words) the weight given is by subtracting 1.
2. For each question with an even number, namely 2, 4, 6, and 10 (questions with negative words), the score given is 5 minus the score previously obtained.
3. To calculate the overall SUS score, the sum of the scores from processes 1 and 2 will be multiplied by 2.5. The results of this calculation will produce a range of values between 0 and 100.

For a more detailed explanation, here is the SUS score calculation formula:

$$\text{SUS Score} = ((Q1-1) + (5-Q2) + (Q3-1) + (5-Q4) + (Q5-1) + (5-Q6) + (Q7-1) + (5-Q8) + (Q9-1) + (5-Q10)) \times 2,5$$

After doing the calculations, the results can be determined using three general aspects, namely acceptability, grade scale, and adjective rating. In this study, a grade scale was used which consisted of five levels, namely A, B, C, D, and F. Each grade level has a predetermined weight for the SUS score [18] as follows:

1. Grade "A" = > 80.3 with the adjective rating "Excellent"
2. Grade "B" = between 68-80.3 with an adjective rating of "Good"
3. Grade "C" = 68 with an adjective rating "OK"
4. Grade "D" = between 51-67 with an adjective rating "Poor"
5. Grade "F" = < 51 with the adjective rating "Awful"

For more details regarding the SUS assessment can be seen in Figure 2.

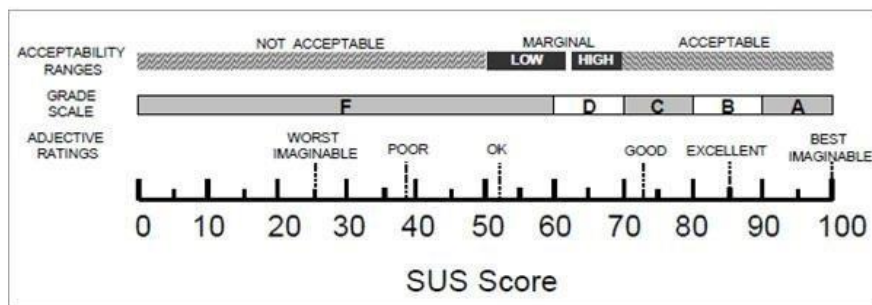


Figure 2. SUS Score

#### 4 RESULTS AND DISCUSSION

On the home screen of the CamScanner application, there are several tools such as SmartScan, PDF Tools, Import Images, Import Files, and so on. The main tools in this application are SmartScan or the camera logo at the bottom right of the home screen which can be seen in Figure 3.

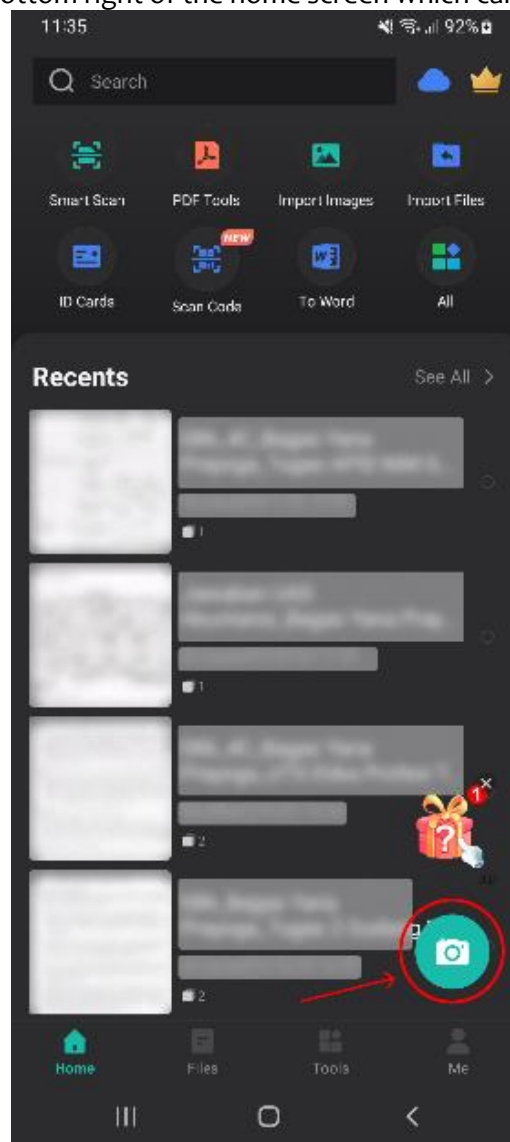
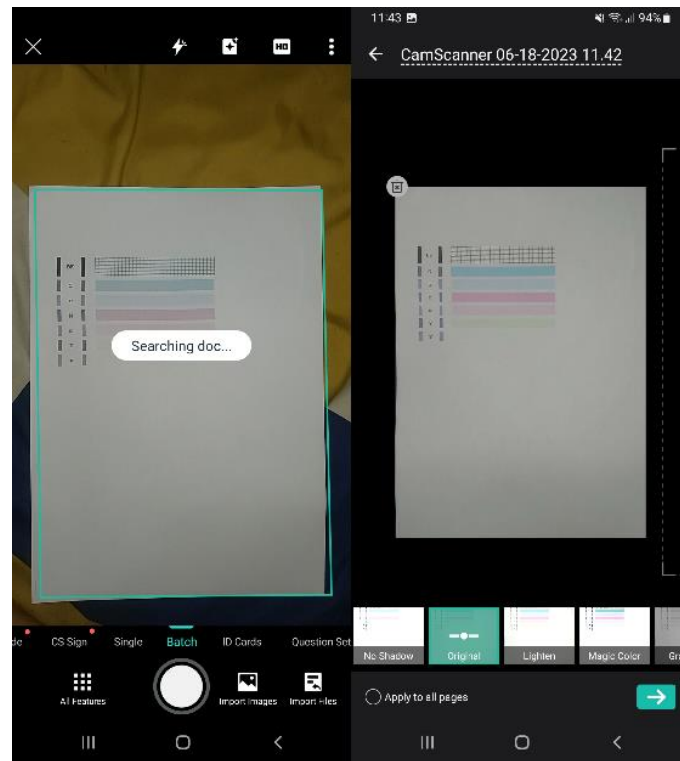


Figure 3. Home Page View

On the Smart Scan page, users can scan documents and can then choose which filter to use, such as Original, No Shadow, Lighten, Magic Color, and so on.



**Figure 4. SmartScan Page Display**

On the Share page, users can easily share or send scanned documents in PDF, WORD, or JPEG format to others via social media, email, or other media.



**Figure 5. Share Page Display**

Furthermore, testing the usability of this application is carried out using the System Usability Scale (SUS) method. Testing was carried out by distributing questionnaires containing 10 statements to 30 respondents. The data that has been collected is then analyzed and the results are summarized in Table 3.

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**Table 3. The Original SUS Questionnaire Data on The CamScanner application**

Respondent	Question									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
R1	5	3	4	2	4	3	4	4	4	5
R2	5	3	5	1	5	2	5	1	5	2
R3	5	2	5	1	5	4	5	2	4	2
R4	5	1	5	1	5	2	5	1	5	4
R5	5	2	5	2	5	2	5	2	5	2
R6	4	2	4	1	4	2	4	2	4	2
R7	5	1	5	1	5	2	5	1	5	5
R8	4	2	3	3	3	2	3	2	3	3
R9	5	2	4	2	4	2	4	2	5	3
R10	4	2	5	2	4	1	4	3	4	2
R11	3	2	4	2	3	3	4	3	3	4
R12	5	2	4	1	4	1	4	1	4	1
R13	4	3	4	2	4	3	3	2	3	2
R14	5	2	5	2	5	2	5	2	5	2
R15	5	1	5	1	5	3	5	1	5	2
R16	5	1	5	5	4	2	5	1	4	4
R17	3	3	4	2	5	3	4	2	3	5
R18	5	1	5	1	5	1	5	1	5	1
R19	4	2	4	2	4	2	4	2	4	3
R20	4	2	4	2	4	2	3	2	3	2
R21	4	3	4	1	4	3	4	2	3	3
R22	4	2	4	3	4	3	4	2	4	4
R23	4	3	4	3	5	3	2	4	4	5
R24	4	2	4	2	5	3	5	2	4	3
R25	5	1	5	1	5	1	5	1	5	1
R26	2	4	2	4	3	3	3	3	2	3
R27	4	2	4	3	4	2	3	2	4	4
R28	4	2	4	3	3	2	4	2	4	4
R29	5	4	4	2	4	2	3	2	3	2
R30	3	2	4	2	4	2	4	2	4	2

The table above is a recapitulation of questionnaire data before calculations are carried out using the SUS method. To see the data that has been calculated using the SUS calculation method, please refer to Table 4.

**Table 4. Questionnaire Count Data with SUS Calculations on The CamScanner Application**

Respondent	Question										Sum	Total Scoring (*2.5)
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
R1	4	2	3	3	3	2	3	1	3	0	24	60
R2	4	2	4	4	4	3	4	4	4	3	36	90
R3	4	3	4	4	4	1	4	3	3	3	33	82.5
R4	4	4	4	4	4	3	4	4	4	1	36	90
R5	4	3	4	3	4	3	4	3	4	3	35	87.5
R6	3	3	3	4	3	3	3	3	3	3	31	77.5

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R7	4	4	4	4	4	3	4	4	4	0	35	87.5
R8	3	3	2	2	2	3	2	3	2	2	24	60
R9	4	3	3	3	3	3	3	3	4	2	31	77.5
R10	3	3	4	3	3	4	3	2	3	3	31	77.5
R11	2	3	3	3	2	2	3	2	2	1	23	57.5
R12	4	3	3	4	3	4	3	4	3	4	35	87.5
R13	3	2	3	3	3	2	2	3	2	3	26	65
R14	4	3	4	3	4	3	4	3	4	3	35	87.5
R15	4	4	4	4	4	2	4	4	4	3	37	92.5
R16	4	4	4	0	3	3	4	4	3	1	30	75
R17	2	2	3	3	4	2	3	3	2	0	24	60
R18	4	4	4	4	4	4	4	4	4	4	40	100
R19	3	3	3	3	3	3	3	3	3	2	29	72.5
R20	3	3	3	3	3	3	2	3	2	3	28	70
R21	3	2	3	4	3	2	3	3	2	2	27	67.5
R22	3	3	3	2	3	2	3	3	3	1	26	65
R23	3	2	3	2	4	2	1	1	3	0	21	52.5
R24	3	3	3	3	4	2	4	3	3	2	30	75
R25	4	4	4	4	4	4	4	4	4	4	40	100
R26	1	1	1	1	2	2	2	2	1	2	15	37.5
R27	3	3	3	2	3	3	2	3	3	1	26	65
R28	3	3	3	2	2	3	3	3	3	1	26	65
R29	4	1	3	3	3	3	2	3	2	3	27	67.5
R30	2	3	3	3	3	3	3	3	3	3	29	72.5
<b>SUM</b>											<b>890</b>	<b>2225</b>
<b>AVERAGE</b>												<b>74.2</b>

From Table 4, it can be concluded that after performing calculations based on the SUS method, there are differences from the previous table. The table shows the SUS scores obtained for the CamScanner application and the average SUS questionnaire scores for the application. In addition, calculations are also carried out for each question by the provisions of the SUS. Based on this table, the total SUS score obtained is 2225. While the average value is 74.2. Referring to the SUS rating rules in Figure 2., the CamScanner application is categorized as "Acceptable" on the acceptability measurement and is in grade "B" with an adjective rating of "Good".

## 5 CONCLUSION

From the various explanations that have been described in this report, it can be concluded as follows:

1. According to the interpretation with acceptability ranges: A score of 74.2 is included in the "Acceptable" category. This shows that the CamScanner application has a usability level that is acceptable to users.
2. According to the interpretation of the Grade Scale: A score of 74.2 is in Grade "B". This indicates that the level of user acceptance of the CamScanner application on a grade scale is quite good and this application still needs evaluation.
3. According to the interpretation of the adjectives rating: A score of 74.2 is in the "Good" category. Even though this is considered good, these results show that there is still room for improving the user experience to make it even better.



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