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Analysis of Usability and User Satisfaction of Tokopedia UI/UX Design Using the SUS Method

Widya Devi Febianti R.S[a*], Ainur Rochmah[b], Diana Putri Yustiani[c], Deviana Eka Rensahda[d], Risa Triassanti[e]

[a,b,c,d,e] *Universitas PGRI Ronggolawe, Jl. Manunggal 61, Tuban, Indonesia*

[*] e-mail address: widyadevi556@gmail.com

Abstract

E-commerce in Indonesia has experienced a rapid transformation, surpassing the growth of previous years. E-commerce has become a significant force, allowing businesses and individuals to seamlessly exchange goods online. Among e-commerce platforms in Indonesia, Tokopedia has established itself as a market leader. This research aims to analyze the usability and user satisfaction of Tokopedia's UI/UX design using the System Usability Scale (SUS) method. The method used involves using specific questions to participants and a Likert scale to measure their responses. The results show that Tokopedia's UI/UX Design has a "GOOD" level of usability, proven by a SUS score 70. Tokopedia can improve the UI/UX to a level that fosters user enthusiasm and loyalty.

Keywords: Tokopedia, UI/UX Design, System Usability Scale (SUS), Usability.

1. Introduction

E-commerce in Indonesia has undergone a rapid transformation, surpassing the growth of previous years. E-commerce has become a significant force, enabling businesses and individuals to exchange goods online seamlessly. As the Internet becomes the center of commercial transactions, online shopping has become the primary choice for many Indonesians. The rise of information and communication technology has played a crucial role in strengthening the online trading system, particularly with the proliferation of e-commerce platforms (Widiyawati et al., 2022).

Among Indonesia's e-commerce platforms, Tokopedia has established itself as the market leader. This is supported by research by Shelly Novianty and Agus Kusnawan (2022), which shows that Tokopedia is the most visited e-commerce platform in Indonesia. Launched in 2009, Tokopedia is the brainchild of William Tanuwijaya and Leontinus Alpha (Novianty & Kusnawan, 2022).

Despite its success, Tokopedia still has room for improvement. This is reflected in user reviews on the Tokopedia application, which highlight various shortcomings. With over 10 million downloads and 6 million reviews, the app has only received an average rating of 4.6 stars. These reviews point to features prone to errors or malfunctions, such as the disappearance of the wishlist function in the cart menu and the app crashing during checkout (Lestar, 2018).

These issues indicate the potential to improve Tokopedia user satisfaction. Therefore, this study aims to analyze the usability and user satisfaction of Tokopedia's UI/UX design using the SUS method. The SUS method was chosen for its ease of use, reliability, and focus on the end-user experience (Brooke. J, 2013).

2. Literature Review

Before delving into this research, it is crucial to understand previous studies that have examined Tokopedia's usability using the System Usability Scale (SUS) method. These studies provide valuable insights and strengthen the foundation of this research.
The first study evaluated the usability of the Tokopedia application version 3.242 using the SUS method. The results showed a SUS score of 55, placing the application in the "OK" category with a "Marginal" acceptance rate. This study identified several aspects that need to be improved, such as application speed, shipping, and payment methods (Manurung et al., 2024).
The second study conducted a comparative study of the usability of UI/UX designs on the Tokopedia, Shopee, and Lazada applications. The results showed that all three applications had usability scores in the "OK" and "GOOD" ranges, with Shopee having the highest SUS score (Muqoddas et al., 2020).
The third study analyzed the usability and user satisfaction of the Tokopedia website using the SUS method. The results showed that application speed is the main factor influencing user satisfaction. The quality of information, features, and completeness of seller and buyer pages were rated as satisfactory (Silviyani et al., 2023).
Based on the studies above, it is evident that Tokopedia's usability still has room for improvement. Application speed, aspects related to user satisfaction, and user recommendation integration are the main areas that need to be considered.

2.1. Usability

Usability is a crucial concept in product design that focuses on user experience. Usability measures the extent to which a product can be used by a particular user to achieve goals effectively, efficiently, and satisfactorily in a specific context. Effectiveness means the product can help users achieve accurate and complete results, efficiency means goals are achieved quickly and easily, and satisfaction reflects the user's comfort when interacting with the product (Purwani Istiana, 2011).
Usability is a concept that measures how easy a product is to use. Although there is debate regarding the validity and reliability of usability metrics, this concept remains an important tool in understanding and improving the quality of interactions between users and products. In this context, usability is defined by the International Organization for Standardization (ISO) as the effectiveness, efficiency, and satisfaction experienced by users when interacting with a product (Borsci et al., 2019).

2.2. User Satisfaction

User satisfaction is the main basis for success in the competitive world of e-commerce. Therefore, regularly measuring and evaluating user satisfaction is an important step to

ensure that e-commerce platforms not only meet but also consistently exceed user expectations (Surya et al., 2023). By understanding user expectations and needs, e-commerce platforms can continuously innovate and improve their services to create a satisfying shopping experience and build long-term customer loyalty.

2.3. Tokopedia

Tokopedia started its journey with initial funding from PT Indonusa Dwitama in 2009. Then they received an injection of funds from global investors such as East Ventures (2010), CyberAgent Ventures (2011), Netprice (2012), and SoftBank Ventures Korea (2013). In October 2014, Tokopedia made history by successfully becoming the first technology company in Southeast Asia, to receive an investment of 100 million USD or around IDR 1.2 trillion from Sequoia Capital and SoftBank Internet and Media Inc. This brilliant achievement led PT Tokopedia to win the 2014 Marketeers of the Year award for the E-Commerce sector at the 2015 Markplus Conference held by Markplus Inc. on December 11, 2014 (Wilsen et al., 2018).

2.4. User Interface (UI) and User Experience (UX)

User interface (UI) is the visual aspect of a product which consists of elements in the form of shapes, colors, and typography. This aims to create an attractive and easy-to-use appearance for users. User Experience (UX) is an input, response, or thing that a user feels when interacting with a product or service system (Firmansyah, 2023).
User Interface (UI) is an asset that helps users to interact with the product interface for services. UI includes visual design elements such as color and typography, as well as guidelines, workflows, and design processes that aim to create an easy and enjoyable user experience (Sharma & Tiwari, 2021).
User Experience (UX) plays an important role in the system requirements gathering process because it can reduce the gap between actual user needs and business analysts' understanding, thereby increasing the effectiveness of system development results at a more cost and time-efficient rate (Y. Aleryani, 2020).

2.5. System Usability Scale (SUS)

System Usability Scale (SUS) is an easy-to-use method for measuring the usability of an application. SUS was developed as a “quick and dirty” usability measurement. SUS is a questionnaire that can be used to measure the usability of a computer system from the user's perspective. Developed by John Brookee in 1986, SUS allows subjective measurement of application usability in the form of a questionnaire consisting of 10 question items. Until now, SUS has been widely used to measure usability and shows several advantages, including: (1) SUS can be used easily, because the results are in the form of a score of 0–100; (2) SUS is very easy to use, does not require complicated calculations; (3) SUS is available for free, does not require additional costs; and (4) the SUS is proven to be valid and reliable, even with a small sample size. The testing scale ranges from 1 (strongly disagree) to 5 (strongly agree) (Sanjaya et al., 2021).

3. Method

This research employs a quantitative approach with a survey method to evaluate the usability and user satisfaction of Tokopedia's UI/UX design (Wekke, 2019). A total of 116 active Tokopedia users in Indonesia were recruited online to complete a translated System Usability Scale (SUS) questionnaire. The questionnaire consisted of 10 questions asking users to rate statements about the ease of use of Tokopedia. Data were analyzed using descriptive statistics to calculate the average SUS score and the SUS score for each question. The SUS scores were then compared to the SUS norms to determine the usability level of Tokopedia. Written informed consent was obtained from all participants before they completed the questionnaire, and the confidentiality of user data was ensured (Brooke. J, 2013).
This research involves a series of stages designed to establish a clear structure and facilitate the implementation of research. The stages of this research are described in the following figure.

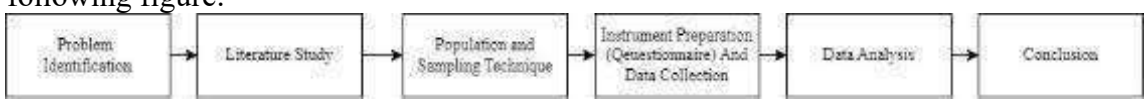

Fig. 1. Research Methods

3.1. Problem Identification

This study aims to analyze the usability and user satisfaction aspects of Tokopedia's UI/UX design. The initial stage of the research was conducted by identifying problems through observation and evaluation of the Tokopedia application. The subject of this research is the Tokopedia application, while the object of the research focuses on the usability aspect. The SUS (System Usability Scale) method was used to evaluate the usability of the Tokopedia application and to determine the level of user satisfaction with the application's UI/UX design.

3.2. Literature Study

This study conducts a comprehensive literature review to examine previous research related to usability and user satisfaction in e-commerce app UI/UX design. The purpose of this literature review is to obtain a strong and relevant theoretical foundation for the research topic, as well as to understand the various methods and approaches that have been used in previous research. Information sources used in this literature review include scientific journals, articles, books, and thesis reports.

3.3. Population and Sampling Technique

This study involves Tokopedia application users as the population sample. The sampling technique used is simple random sampling, where the sample is randomly selected from all Tokopedia application users who have updated. This is done to ensure

that the research sample is representative of the entire population of Tokopedia application users.

3.4. Instrument Preparation (Questionnaire) and Data Collection

To collect research data, a questionnaire instrument was developed with three parts. The first part contains questions about the respondent's profile, the second part focuses on general questions about the user experience of the Tokopedia application, and the last part uses the System Usability Scale (SUS) which consists of 10 questions as shown in Table 1. SUS is used to evaluate the usability aspects of the Tokopedia application.
The System Usability Scale (SUS) questionnaire employs a 5-point Likert scale. Respondents are instructed to rate the 10 SUS questions using the following options: "Strongly Disagree", "Disagree", "Neutral", "Agree", and "Strongly Agree" based on their judgment. In cases where respondents struggle to find the most suitable option, they are advised to select the midpoint on the rating scale.

Table 1. Question System Usability Scale (SUS)

No.	Question
1	I would use this Tokopedia application again.
2	I find the Tokopedia application complex to use.
3	I find the Tokopedia application easy to use.
4	I need the assistance of others or the latest instructions to use the Tokopedia application.
5	I feel that the features of the Tokopedia application work well.
6	I feel there are many inconsistencies in the Tokopedia application.
7	I feel that others will quickly understand how to use the Tokopedia application.
8	I feel the Tokopedia application is confusing.
9	I feel there are no obstacles to using the Tokopedia application.
10	I need to get used to the Tokopedia application before using it comfortably.

3.5. Data Analysis

This section focuses on data processing to present hypothetical results of variables involving the System Usability Scale (SUS). The data analysis indicates a positive influence among variables. Consequently, conclusions can be drawn from this study, namely the Usability Evaluation of the Tokopedia application using the System Usability Scale (SUS) Method, which emphasizes efficiency measurement. Data was collected

from residents of Tuban who had updated the Tokopedia application. The System Usability Scale (SUS) as a usability evaluation method is considered to provide adequate results, particularly in the context of a small sample size and time and cost considerations. The calculation generates an SUS score that will be converted into a value to aid in the decision of whether an application is feasible for implementation. SUS is also employed to assess the extent to which user experience factors can significantly impact the assignment of high SUS scores.

3.6. Conclusion

The conclusion section serves as the culmination of the research process. Here, the study is brought to a close by summarizing the key findings obtained through data analysis and addressing the research question. The conclusion also provides recommendations for improvement of the Tokopedia application's UI/UX design and identifies potential areas for future research.

4. Result

In this study, 116 respondents received the questionnaire distribution, this was due to the short time of the research and the 116 respondents had answered the existing problems and all the answers were valid there were no duplicate data. Apart from that, the respondents were not distributed only to a group of people, namely the youth of the Tuban community. Based on respondents the data obtained were 53 male respondents (45.7%) and 63 (54.3%) female respondents, dominated by the age range of 20-25 years. Next, calculations will be carried out for each questionnaire data that has been collected from respondents. The results of these calculations are summarized in Table 2. To provide an overall picture.

Table 2. Results of the SUS Score Calculation Process on the Tokopedia Application

Respond	Score Calcu lated Results		Respond	Score Calculated Results	
	Sum	Value		Sum	Value
R1	28	70	R107	38	95
R2	33	82,5	R108	33	82,5
R3	39	97,5	R109	24	60
R4	27	67,5	R110	33	82,5
R5	32	80	R111	23	57,5
R6	35	87,5	R112	25	62,5
R7	38	95	R113	29	72,5
R8	32	80	R114	35	87,5
R9	28	70	R115	37	92,5
R10	29	72,5	R116	25	62,5
Average System Usability Scale (SUS) Score					
70					

Based on the recapitulation results, the average System Usability Scale (SUS) score was obtained. In the Tokopedia application, it is 116. This result invites interpretation of the data by referring to the scale established by Bangor for SUS scores, as illustrated in Figure 2. This interpretation can later provide further insight into the usability of the system and user satisfaction with the application.

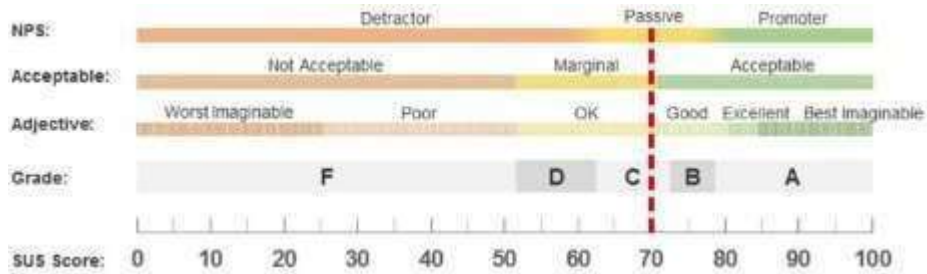

Fig. 2. SUS Score Interpretation Results on the Tokopedia Application.

More complete interpretation results can be seen in Figure 2. The Tokopedia application was given a C score based on aspects, with a System Usability Scale (SUS) score of 70, then a SUS score above 68 would be considered above average. From an approach based on traits (Adjective), this application is included in the GOOD category, and the level of acceptance (Acceptable) is included in the GOOD category. Marginal category, meaning that in general this application can be accepted by users. It should be noted that the interpretation based on the Net Promoter Score (NPS) shows Passive results, which means that users tend not to reject or are not enthusiastic about Tokopedia, but do not specifically like it.

In other words, in terms of usability and interpretation based on the nature of the application, it is acceptable, the NPS results show the tendency of users to be enthusiastic about the application. This shows that this application is liked and recognized by users. However, it still needs to be improved.

5. Discussions

The results of this research, which indicate that Tokopedia's UI/UX design is "GOOD" with a SUS score of 70, are consistent with previous studies that also found Tokopedia's usability to be in the "OK" to "GOOD" range. However, the SUS score of 70 is still below the average SUS score of 73.7, indicating that there is room for improvement in Tokopedia's UI/UX design (Manurung et al., 2024).

The analysis of user feedback revealed several areas where Tokopedia can enhance its UI/UX design. For example, users mentioned issues with the disappearance of the wishlist function in the cart menu and the app crashing during checkout. These issues could be addressed by improving the reliability and stability of the app.

Furthermore, user feedback indicated a lack of enthusiasm for the app, as reflected in the "Passive" Net Promoter Score (NPS). This suggests that while users generally find the app acceptable, they are not particularly excited about it. Tokopedia could improve

user engagement and excitement by introducing new features, personalizing the user experience, and improving the overall aesthetics of the app.
Another area for improvement is application speed, which has been identified as a major factor influencing user satisfaction in previous studies. Tokopedia could address this issue by optimizing the app's performance and reducing loading times.
In addition to the specific issues mentioned above, Tokopedia could also focus on improving the overall intuitiveness and user-friendliness of the app. This could involve simplifying the navigation, making the layout more intuitive, and providing clearer instructions and feedback.
By addressing these areas of improvement, Tokopedia can enhance user satisfaction, increase user engagement, and strengthen its position as the leading e-commerce platform in Indonesia.
In conclusion, this study has provided valuable insights into the usability and user satisfaction of Tokopedia's UI/UX design. The findings of this research can be used by Tokopedia to improve its app and provide a better user experience.

6. Conclusion

Based on the analysis results, it can be concluded that Tokopedia's UI/UX Design shows a "GOOD" level of usability, as evidenced by a SUS score of 70. However, there is potential to increase user satisfaction and acceptance by addressing areas of improvement identified through user feedback analysis.
By prioritizing user needs, incorporating feedback into the development process, and continually refining the design, Tokopedia can improve the UI/UX to a level that fosters user enthusiasm and loyalty. This will ultimately contribute to the platform's long-term success in the competitive e-commerce landscape.

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