Jurnal Entrepreneur dan Entrepreneurship, Vol. 10, No. 2, September 2021, 103–110
ISSN 2302-1802 print / ISSN 2580-9393 online

USABILITY TESTING ON E-COMMERCE SHOPEE BASED ON MOBILE APPLICATION WITH COGNITIVE WALKTHROUGH METHOD TO INCREASE ENTREPRENEURIAL

Alfarizi Alif Attamimi, Kartika Gianina Tileng
Departement of Information System for Business,
Universitas Ciputra Surabaya, Surabaya, Indonesia

JEE
10, 2
Received, August '21
Revised, September '21
Accepted, September '21

Abstract: As we know, currently the use of mobile e-commerce is becoming a trend as an opening for entrepreneurs. As a supporter of creative entrepreneurship, it is necessary to develop a user interface and user experience. To create a quality mobile application, one of the steps that can be taken is to carry out a usability testing. This study aims to measure and provide recommendation for improvements in e-commerce based on the Shopee mobile application based on the results of the usability evaluation which is reviewed by Shopee users, effectiveness, efficiency and satisfaction. After conducting usability testing on e-commerce based on Shopee's mobile apps with the cognitive walkthrough method and the System Usability Scale (SUS), the results of the research on aspects of effectiveness are 93%, the level of speed efficiency every second is 0,08 and 72% satisfaction. To increase the usability level of e-commerce based apps, this study designed a recommendation on the Shopee e-commerce application that changes the layout of the pages and menus, and the others is simplifies the display.

Keywords: usability testing, cognitive walkthrough, e-commerce, shopee, entrepreneur

Introduction

The growth of information technology causes changes in globalization, starting from one's perspective and even its use in everyday life which is practical, fast and sophisticated due to the merger between digital technology and the internet. In a business, it's necessary to always develop in terms o skills and responsibilities. Not a few entrepreneurs are competing to create products that look more unique to potential buyers. Due to technological developments, there are many ways that can be easily to market a product.

E-commerce is a combination of buying, selling in which marketing transactions occur between goods and services using modern electronic systems (Wong, 2010). E-commerce is a way of shopping online that uses the internet so that it can be connected and accessed anytime anywhere. The workings of the e-commerce system seeks to present detailed information to introduce a product so that users are sure of the product they want to buy. This e-commerce application is also strongly supported by a complex interface design feature. The application that users are interested in is the ease of use (user friendly) so that the user experience becomes more secure. Mobile apps are said to need an evaluation if the usability level is bad because it will affect the ease of use (Wedayanti et al., 2019).

*Corresponding Author.
e-mail: aalif@student.ciputra.ac.id

Shopee is a marketplace that is widely used by the public. This marketplace provides a search feature to make it easier for users who want to search for goods and services, filters so that the information needed can be detailed about the seller's location to the desired price, and category features that can be used as a shopping catalogue and much more. In the research conducted by iPrice 2020, Shopee leads as the number one largest online store site in Indonesia.

In accordance with the explanation above, the background of the author makes it a problem in the research. The reason for considering the use of this problem is because the researcher intends to share and present the results of usability values on the Shopee application. The results of these values can be used as criteria and parameters for the level of satisfaction, convenience and provide changes to the application from its users. The changes that may be given in this research can be used as input and development material as well as considerations so that the Shopee application can develop better, especially in terms of usability as an online-based buying and selling application.

The purpose of this study is to measure usability testing on e-commerce based on Shopee's mobile apps using the cognitive walkthrough method and provide recommendations resulting from the results of the usability evaluation.

Method

This research will focus on usability testing using Cognitive Walkthrough, distributing SUS questionnaires, and interviews. The research procedure can be seen in Figure 1.

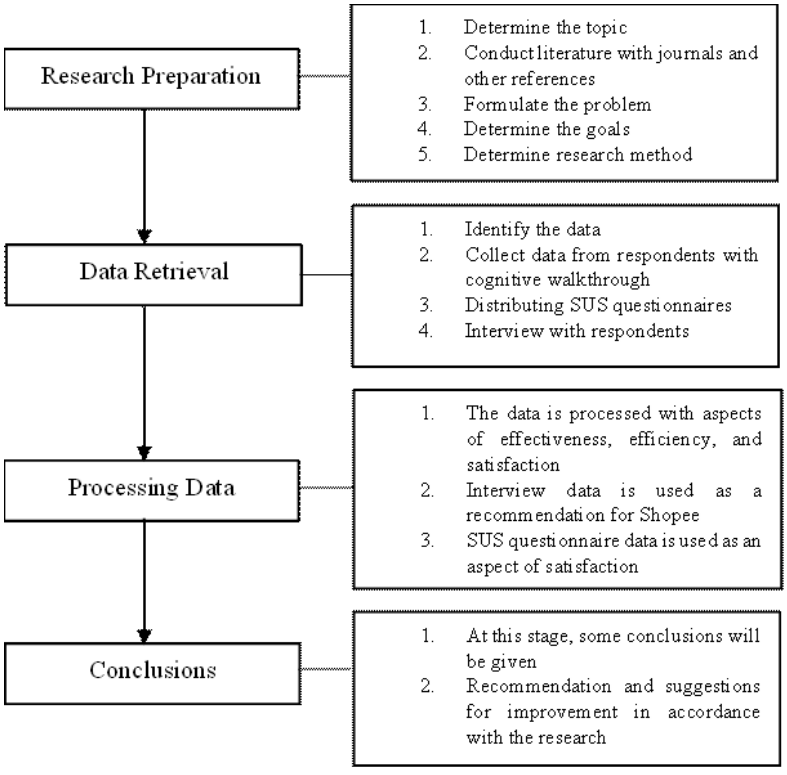

Figure 1 The Research Procedure

Research Variables

The variables in this study include three aspects of usability testing, namely the aspects of effectiveness, efficiency and satisfaction. The respondent is someone chosen by the researcher as the research subject. In this research, using five respondents as a research subjects.

Method of Collecting Data

1. The task scenario
   In this test, it will begin by designing task scenario that must be completed by the respondent.
2. Interview
   After the respondent works on the task scenario that has been made by the evaluator,

Table 1 The Task Scenario

No.	The Task Scenario	No.	The Task Scenario
1	Before you transact on the Shopee application, sign up or login first.	14	View products you've previously saved.
2	After the sign up or login process is successful, fill in the address according to your location that will be used in shipping.	15	You intend to find several products that you want to buy from one seller or seller. Find out what other featured products they have available.
3	You are planning to find a product. Visit the Shopee app and see the product you want.	16	Checkout different products in one seller or store.
4	You want to search for products on Shopee. Find any resellers or sellers closest to your location.	17	Buy the product and choose the return address you want.
5	Find out how to make it easier to search for products according to your preferred payment method.	18	Before you successfully place an order for a product, make sure you have chosen the expedition that suits your wishes.
6	Find your desired product by category.	19	Make sure the payment for the product you are going to checkout is in accordance with your choice.
7	Look for the product you want for less than Rp. 200,000.	20	Use the Shopee voucher that you have before you will checkout your order *if any.
8	Find the type of seller that suits your needs to find the product you want to buy.	21	Redeem the Shopee coins you have before the checkout process of your product order.
9	Find products based on ratings of your choice.	22	Make an order for the product you have found according to the location, delivery and payment method you want.
10	Find your desired product based on the delivery you want.	23	See if your order has been packaged by the seller.
11	Do a product search based on promotional programs.	24	Find out your order has been shipped by the seller or the seller of the product you ordered.
12	After you choose a product you want to buy, make sure that the product is available.	25	Complete orders that have arrived at the destination address.
13	Find ways to tag and save the products you want.	26	Submit an assessment of the product.

Table 2 System Usability Scale Questionnaire

No.	Pernyataan	No.	Pernyataan
1	I feel like using the Shopee app often.	6	In my opinion, there are no inconsistencies in the Shopee application.
2	I feel the Shopee application is not complicated to use.	7	I feel that generally people will learn to use the Shopee app quickly.
3	In my opinion, the Shopee application is easy to use.	8	In my opinion, the Shopee application is easy to use.
4	In my opinion, I will not need support from a technical person to be able to use this Shopee application.	9	I feel confident using the Shopee app.
5	I find that the various functions in the Shopee application are well integrated.	10	I can quickly understand how to use the Shopee app.

the respondent will be asked to answer questions through an interview session. The questions that the evaluator will give to the respondents during the interview process are:

a. Is there a display of feature that annoys you during the process?
b. In your opinion, what difficulties did find?
c. Did the respondent find the control easily?

3. System usability scale questionnaire
   The questionnaire contains 10 statements with five answer options using a Likert scale, namely (1) strongly disagree, (2) disagree, (3) doubtful, (4) agree, and (5) strongly agree. The following is the description of system usability scale questionnaire in Table 2.
4. Usability testing
   Usability testing is used to look for usability problems that exist in e-commerce, measuring the extent to which the level of ease of users in completing tasks on the use of e-commerce, the extent to which the level of speed required by users to find the information needed in e-commerce, and the extent to which the level of user error.

Results

To determine the respondents' criteria in this study, the main target was used, namely users who had used Shopee. Then the criteria will be taken as research samples using purposive sampling technique where the sample will

Table 3 User Success Data

Task	%Success	Task	%Success	Task	%Success	Task	%Success
1	100%	9	80%	17	100%	25	100%
2	100%	10	100%	18	100%	26	100%
3	100%	11	100%	19	100%		
4	80%	12	40%	20	100%		
5	100%	13	60%	21	100%		
6	100%	14	60%	22	100%		
7	80%	15	100%	23	100%		
8	100%	16	80%	24	100%		

Amount of Time to Complete Scenario Tasks

Table 4 Amount of Time

Responden	Time (sec)
1	1130
2	1006
3	413
4	1264
5	492
Mean	861

be determined from direct sampling by considering the main target criteria.

Task Scenario Completion Rate

This measurement will be carried out based on how many percentage of the task scenarios the respondent has successfully completed without experiencing errors in the stages.

To complete the task scenario will require a time calculation where the amount of time represents the amount of time it takes the respondent to complete the task.

User Satisfaction

SUS is a method used to assess a product by measuring the level of usability. The level of satisfaction can be measured by filling out the system usability scale (SUS) questionnaire.

Discussion

The usability test results show that there are scenarios of tasks completed by respondents by making mistakes. Errors can be in the form of slips, unintentional actions, errors or omissions when the user tries to complete a given task scenario (Misfud, 2015). The results obtained from the measurement of % success is 93%. A system's effectiveness is said to be effective if its % success in completing task scenarios is 78% or more and is not below 49% in accordance with ISO/IEC 9126-4 (Wardani et al., 2019). The results obtained are 93% which states that respondents have a very high level of understanding of Shopee e-commerce or in other words it is not difficult.

To complete the task scenario will require a time calculation where the amount of time represents the amount of time it takes the respondent to complete the task (Raharjo et al., 2016). The fastest amount of time to complete the task scenario is 413 seconds and the longest time is 1264 seconds. It is concluded that the average amount of time to complete the task scenario of the respondents is 861 seconds. The result of time based efficiency calculation is 0.08 goals/second. Then the respondent can

Table 5 User Satisfaction Result

Responden	SUS
1	57,5
2	87,5
3	62,5
4	70
5	82,5
Mean	72

complete the task scenario as much as 8% in every second. These results can be useful to see the speed level to find the information needed for the user (Farouqi et al., 2018).

SUS is a method used to assess a product by measuring the level of usability. The level of satisfaction can be measured by filling out the System Usability Scale (SUS) questionnaire (Wardani et al., 2019). This data is generated from the distribution of the SUS questionnaire to five respondents as a form of measuring user satisfaction on the Shopee e-commerce application. The results obtained from the calculation of the average SUS of 72. Then the results are represented in the appropriate category according to Jeff Sauro. The percentage generated from the SUS score of 72 falls into the category C grade scale with adjective ratings "good" while the acceptability ranges fall into the "acceptable" category.

A total of five problems that arise in this study on the Shopee e-commerce application are related to what has been experienced directly and the results of interviews by respondents. The first usability problem (MA1) is that respondents are confused about finding products based on ratings so they scroll (scroll the screen) repeatedly and search manually. The second usability problem (MA2) is that respondents are confused when making sure the selected product is available. The third usability problem (MA3) is the slow loading time of the Shopee application. The fourth usability problem (MA4) is that respondents feel the Shopee application is heavier and transfer transactions using Shopee are too complicated. The fifth usability problem (MA5) is that respondents feel that the pop up ads displayed when opening the Shopee application are too annoying.

The Shopee e-commerce application has an effectiveness value of 93% which is included in the effective category and the efficiency results obtained with a value of 0.08 goals/second still need improvement based on respondents' input obtained from usability testing techniques using cognitive walkthroughs and interviews. Some of the obstacles are that respondents do not really understand the contents of the "filter" feature which results in some respondents having to search manually and the Shopee application which is too heavy. The recommendations given are in the form of improving the layout of the Shopee application and simplifying the display.

In this study, usability testing has a relationship with the value of entrepreneurship in the aspect of creation where if we as system analysts can develop User Interface (UI) and User Experience (UX) on their Mobile application so that users who use it can easily understand when using this application and perform transactions, so that it can attract other users' interest in using this e-commerce application later.

References

Brooke, J. (2013). SUS: a retrospective. Journal of Usability Studies, 29–40.

Farouqi, M., Aknuranda, I., & Herlambang, A. (2018). Evaluasi Usability pada Aplikasi Go-Jek dengan Menggunakan Metode Pengujian Usability. *Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer*, 3110–3117.

iPrice. (2020, Februari 09). Peta E-commerce Indonesia. Retrieved from iPrice insights: https://iprice.co.ic/insights/mapofecommerce/.

Misfud, J. (2015). *Usability Metrics - A Guide to Quantify the Usability of Any System*. Diambil Kembali dari Usability Geek: https://usabilitygeek.com/usability-metrics-a-guide-to-quantify-system-usability/.

Moran, K. (2019, Desember 1). NN Group. Retrieved from NN group website: www.nngroup.com.

Nielsen, K. (2012). Usability 101: Introduction to Usability. (Nielsen Norman Group) Retrieved Januari 14, 2021, from www.nngroup.com.

Raharjo, P., Kusuma, W., & Sukoco, H. (2016). Uji Usability dengan Metode Cognitive Walkthrough pada SItus Web Perpustakaan Universitas Mercu Buana Jakarta. *Jurnal Pustakawan Indonesia*, 19–27.

Wardani, N., Darmawiguna, I., & Sugihartini, N. (2019). Usability Testing Sesuai dengan ISO 9241-11 pada Sistem Informasi Program Pengalaman Lapangan Universitas Pendidikan Ganesha Ditinjau dari Pengguna Mahasiswa. *Kumpulan Artikel Mahasiswa Pendidikan Teknik Informatika*, 356–368.

Wedayanti, N. P., Wirdiani, N. A., & Purnawan, I. A. (2019). Evaluasi Aspek Usability pada Aplikasi Simalu Menggunakan Metode Usability Testing. *Jurnal Merpati*, 113–124.

Wong, J. (2010). *Internet Marketing for Beginners*. Jakarta: Elex Media Komputindo.