



# Analysis of User Experience (UX) in the Use of the TikTok Shop Application with the HEART Metrics Method

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## Abstract

Providing User Experience or a positive experience and optimal service in terms of convenience and comfort for users is one of the important things in designing an application. Therefore, an analysis is needed to measure the acquisition of criteria values and the level of usability from user experience which will later be used as a benchmark for improving application quality. Measuring user satisfaction with the TikTok Shop application is the aim of this research. This test uses the HEART metrics framework which consists of Happiness, Engagement, Adoption, Retention, and Task Success. This research collected data by distributing questionnaires to 60 respondents who were users of the TikTok Shop application. Testing research instruments using validity and reliability test calculations has been said to be valid and reliable. The level of usability of the user experience of the TikTok Shop application has met and exceeded the goals previously determined in the goals-signal-metrics with a variable value of Happiness of 80.1%, Engagement of 78.3%, Adoption of 81%, Retention of 81.5%, and Task Success was 81.1%. These results mean that the TikTok Shop application has created a positive experience for its users, but further development is needed to provide a better user experience in the future.

**Keywords:** Heart Metrics, TikTok Shop, User Experience

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## 1. Introduction

Currently, advances in information technology have had quite a broad impact on all levels of society by making it easy to get information anywhere and at any time. This form of progress is the emergence of Social Media and E-Commerce including; Instagram, Facebook, Whatsapp, TikTok, Shopee, and so on [1]. A survey conducted in 2022 by the Indonesian Internet Service Providers Association revealed that Indonesian internet users reached 215 million people out of Indonesia's total population of 273 million people, 78 percent of whom were internet users. Since the pandemic hit, the main commodity to support human activities is the Internet. To support all activities, fast internet access is needed to make activities easier [2].

Business activities carried out with the aim of making a profit and maintaining the business, namely sales. To support the consumer community in shopping and make it easier for sellers to market their products, E-Commerce is needed as a digital-based sales media [1]. Social media has become one of the main tools for entrepreneurs and companies to market their products and services. One of the media in question is the social media TikTok. TikTok social media initially provided entertainment through interesting videos, but now the application has innovated its newest feature which is getting widespread attention, namely E-Commerce or online buying and selling transactions called TikTok Shop [1]. By combining entertainment and shopping activities, TikTok Shop offers a unique experience that allows users to discover and purchase products directly from the app.

On research [3], using the HEART Metrics method, different percentage results were obtained for each variable, and overall from all variables the percentage results were 75.26%, which stated that the Alfagift application was in the good category. Then On to Research [4], using the HEART Framework calculation method in the Peduli Protect application, shows the results that several improvements are needed in various aspects, including redesigning the appearance by redesigning the Peduli Protect appearance by paying attention to UI and UX aspects, innovation ideas for features, socialization of existing features, and there needs to be improvements in terms of efficiency and effectiveness in these applications. Therefore, to ensure that TikTok Shop provides an optimal user experience, it is necessary to analyze user interactions with this platform. To ensure TikTok Shop provides an optimal user experience, in-depth analysis is required. One of the user experience measuring tools used in this research is Heart Metrics, which includes five main dimensions: Happiness, Engagement, Adoption, Retention, and Task Success. The results of Google's development which have been generalized by several Google companies are Heart Metrics so that other organizations can adapt the Heart Framework [5]. This method not only helps identify platform strengths and weaknesses, but also provides insights for continuous improvement.

In this research, we will explore how TikTok Shop users interact with this platform through the HEART Metrics approach. By understanding the user experience in more depth, we hope to provide valuable recommendations to improve the performance and satisfaction of TikTok Shop users.

## 2. Research Methods

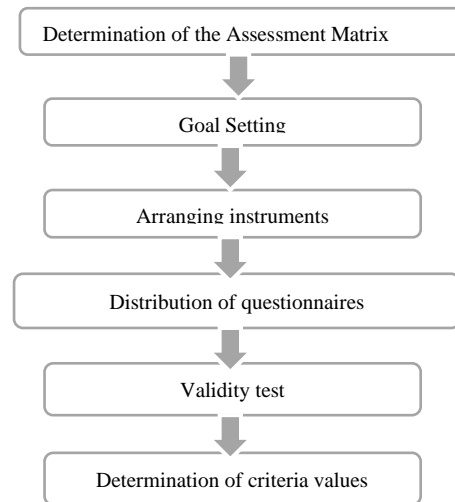


Fig. 1: Quantitative Research Flow

This research uses quantitative research methods with an experimental research approach. Figure 1 shows the research flow of this research, which starts from the first stage, determining the assessment metrics, until finally the stage of determining the criteria values and level of usability.

### 2.1. Method of Collecting Data

This research uses a data collection method sourced from the results of distributing questionnaires filled out by 60 respondents who have used the TikTok Shop at Trunojoyo University, Madura. This questionnaire contains questions designed to collect information related to the research object [6]. The list of questions is structured based on user-centered metrics from the HEART framework. This metric uses a Likert scale with 5 answer choices, starting from 1 which indicates "Strongly Disagree" to 5 which indicates "Strongly Agree".

### 2.2. HEARTH Metrics Testing

Heart Metrics is an evaluation tool developed specifically with a focus on the user. This framework, designed by Kenny Rodden, is based on metrics centered on user experience at Google [5]. HEART is an acronym that refers to five main components, namely: Happiness, Engagement, Adoption, Retention, and Task Success [3].

The steps in testing metrics are as follows:

**a. Determination of Evaluation Matrix**

The Heart Framework is a method for evaluating the user experience (UX) of software. This framework helps companies to assess various aspects of UX using five user-centric metrics. these metrics. which form the acronym HEART, namely: Happiness, to measure user satisfaction. Engagement, to measure frequency. Adoption, to measure total new users or feature usage. Retention, to measure the quantity of users who continue to use or apply the product. Task Succes, to measure maximization, effectiveness and the level of error in product use.

**b. Penentuan Goals, Signals, and Metrics**

**c.** By using special methods, the HEART Framework can determine clear goals, identify signals that indicate goal achievement, and create matrices to measure these signals accurately.

**d. Maximum Value Calculation**

The maximum score, which is the ideal target, is calculated by multiplying the score for each question by the number of questions in each metric and the total number of respondents [7]. The following is the formula for determining maximum N

$$N_{max} = NQ_{max} \times \Sigma Q \times R$$

Information:

$N_{max}$  : The highest possible score produced by each criterion

$NQ_{max}$  : The maximum value assigned to each question.

$\Sigma Q$  : Number of questions

$R$  : Number of respondents

**e. Calculation of Total Value**

The total score is the sum of the scores obtained for each question item from the 60 respondents who filled out the questionnaire in this study[8].

**f. Determination of Criteria Values and Level of Usability**

The criteria score is obtained by calculating the ratio between the total score achieved and the maximum score, then multiplying by 100%. The following is the formula for determining the criterion value:

$$\text{Criteria Value} = \frac{N_{total}}{N_{max}} \times 100\%$$

Then calculate the average for each variable and continue to determine level of usability from the acquisition of  $N_{max}$  and  $N_{total}$ . based on Table 1.

**Table 1:** Criteria Values and Level of Usability

Correlation Coefficient	Realibility Criteria
81-100%	Very good
61 - 80%	Good
41- 60%	Not so good
21 – 40 %	Bad
<20%	Very bad

### 3. Results and Discussion

In this section, the process of data collection and calculations and analysis used to measure user satisfaction with the TikTok Shop application will be described.

#### 3.1. Signals and Metrics (GSM) Determination

**Table 1:** Goals-Signal-Matrics

Aspect Name	Goals	Signal	Matrics
Happiness	70% of users are satisfied with the experience of using TikTok Shop.	Develop a survey with specific questions about user satisfaction and measure the percentage of respondents	User Survey
Engagement	70% of active users use TikTok Shop's key features at least weekly and find them useful	Measure through surveys how often users interact with an app and how useful they find its features	User Survey
Adoption	70% of new users can understand and use the main features of TikTok Shop within the first 24 hours after downloading the application	Assess through surveys how new users respond to their initial experience with the app	User Survey
Retention	70% of users return to Tiktok Shop to shop at least once every two weeks	Measure through surveys how often users return to the app and whether they continue to use the same features over time	User Survey
Task Success	70% of users can easily find and buy the products they want on TikTok Shop	Assess through surveys how successful users are in completing key tasks	User Survey

#### 3.2. Research Instrument

The next stage is to compile a list of questions to ask the user. For variable statements Happiness coded with code H, Engagement with code E, Adoption with code A, Retention with R code, and Task Success with code T. Each question item must be answered by research respondents by selecting a value on a 1-5 Likert scale, where 1 is Strongly Disagree, 2 is Disagree, 3 is Neutral, 4 is Agree, and 5 is Strongly Agree. Table 2 shows a list of question items asked to users.

**Table 2:** List of Questionnaire Question

Code	Question
H1	I feel satisfied when using TikTok Shop
H2	I am interested in the appearance of the TikTok Shop application.
H3	I find the TikTok Shop application easy to use.
H4	I would recommend TikTok Shop to others
E1	I feel TikTok Shop can be used all the time
E2	The TikTok Shop application feature is useful for me.
E3	All the features in TikTok Shop worked well the first time I used it
A1	I knew how to use TikTok Shop the first time I accessed it
A2	The TikTok Shop application can meet my needs.
R1	I often use the TikTok Shop application features.
R2	The first feature of the TikTok Shop application that I used, I still use it to this day.
T1	I can find the products I want in the TikTok Shop application.
T2	I can make purchase transactions easily in the TikTok Shop application.

#### 3.3. Validity and Realibility Test

This research shows that the measuring instruments used for each variable are valid. This is proven by the correlation value per variable item which is greater than the r-table (0.2144). Table 3 shows the results of the validity test calculations.

**Table 3:** Validity Test Calculations

Variable	r count	r table	themselves	Information
Happiness	0,6557013482	0,2144	0,05	Valid
Engagement	0,710536532	0,2144	0,05	Valid
Adoption	0,8361457469	0,2144	0,05	Valid
Retention	0,8373253567	0,2144	0,05	Valid
Task Success	0,8476861438	0,2144	0,05	Valid

Apart from that, research instruments are also said to be reliable or consistent. This is proven by the Cronbach's Alpha value which is greater than 0.532. Table 4 shows the calculation results from the reliability test.

**Table 4:** Realibility Test Calculations

CronchBach's Alpha	Information
0,52742960264	quite reliable

### 3.4. HEART Matrics Test Results

Based on the results of processing the level of usability in the questionnaire given to users, each variable shows the following results: The happiness variable which describes happiness when using Tiktok Shop with a total of 80.1% of the criteria; The Engagement variable which shows users' interest in Tiktok Shop is 78.3%; The Adoption variable describes whether users can accept the system with a n-criteria of 81%; The Retention variable describes active users in the Tiktok Shop with criteria of 81.5%; and the Task Success variable describes the efficiency and effectiveness of the system with a criterion value of 81.1%. The results of testing the level of usability on Tiktok Shop show that Tiktok Shop can be very well received by users.

Table 5: Heart Matrics Test

Variable	Number of Questions	nmax	ntotal	criteria	level of usability
Happiness	4	1200	962	80,1%	Very good
Engagement	3	900	705	78,3%	Good
Adoption	2	600	486	81%	Very good
Retention	2	600	489	81,5%	Very good
Task Success	2	600	487	81,1%	Very good

### 3.5. Discussion

From the results of this research, it can be seen whether the level of user experience is in the good category or not. After distributing the questionnaire to measure Tiktok Shop user satisfaction, the following can be obtained:

On variables Happiness shows a score percentage of 80.1% with level of usability criteria in the very good category. This score shows that the Happiness variable meets the success of the goal-signal-metrics set as in table 3 with a minimum target of achieving 70% success. On variables Engagement shows a score percentage of 78.3% with the level of usability criteria in the good category. This score shows that the Happiness variable meets the success of the goal-signal-metrics set as in table 3 with a minimum target of achieving 70% success. On variables Adoption shows a score percentage of 81% with level of usability criteria in the very good category. This score shows that the Happiness variable meets the success of the goal-signal-metrics set as in table 3 with a minimum target of achieving 70% success. On variables Retention shows a score percentage of 81.5% with level of usability criteria in the very good category. This score shows that the Happiness variable meets the success of the goal-signal-metrics set as in table 3 with a minimum target of achieving 70% success. On variables Task Success shows a score percentage of 81.1% with the level of usability criteria in the good category. This score shows that the Happiness variable meets the success of the goal-signal-metrics set as in table 3 with a minimum target of achieving 70% success.

## 4. Conclusion

From the results of the analysis of the Tiktok Shop user experience above, it can be concluded that from the HEART Metrics calculations that have been carried out, the level of usability of the user experience has been achieved and exceeds the previously determined goals. This can be interpreted as saying that the Tiktok Shop application has created a positive experience for its users. However, there is still a need to strive for improvement regarding the achievement of the Engagement variable to be at the very good level of usability criteria like the other four variables. In the Engagement Variable, active users use TikTok Shop's key features at least weekly and find them useful. Therefore, researchers suggest continuing to update the application's features, for example by providing features that function to provide offers, attractive rewards for customers, promo notifications so that users are interested in continuing to visit the application, and several innovation ideas for new features on TikTok. shop. That way, users can actively use the features and continue to experience the benefits of the application.

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