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User Experience Questionnaire Method In Evaluation And Improved Platform Starup With Kebon Kelapa Region Users

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Abstract

The rapid growth of e-commerce in Indonesia has led to the widespread use of platforms like Shopee among the public. However, it remains unclear how users in specific areas, such as the Kebon Kelapa Subdistrict, perceive their experiences while using the platform. This study aims to evaluate the user experience of Shopee in that area to provide recommendations for improving service quality. This research utilized the User Experience Questionnaire (UEQ), which assesses six aspects: Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty. Data were collected from active Shopee users in Kebon Kelapa and analyzed quantitatively to determine perception scores for each aspect. The results indicate that, overall, users reported a positive experience, particularly in the areas of Attractiveness, Efficiency, Perspicuity, Dependability, and Stimulation. However, the Novelty aspect received a neutral score, suggesting that Shopee should enhance its innovation in features and interface design. These findings offer valuable insights for Shopee's development, aiming to create a more inventive, innovative, and engaging platform for its users.

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1. Introduction

The problems that arise are the lack of evaluation of the Shopee user experience specifically in certain areas, such as Kebon Kelapa Subdistrict, the selection of free shipping rates is still rarely implemented, feature explanations are less detailed, and delivery services are not yet on target. And there is no user experience data in the Kebon Kelapa area, application developers tend to make decisions based on general assumptions, which are irrelevant to user conditions in the field. This is important because a feature considered useful nationally may not necessarily suit user needs. To overcome this problem, this research uses the User Experience Questionnaire (UEQ) method which assesses 6 main aspects: attractiveness, clarity, efficiency, accuracy, stimulation, and novelty [1], [2]. This method will provide quantitative data that can be used as a basis for comprehensively and specifically understanding the quality of user experience in Kebon Kelapa Village. It is hoped that the results of this research can provide recommendations in terms of delivery services and postage costs which are not yet optimal for improving Shopee application services According [3]. To evaluate and design an appropriate user experience, a research questionnaire survey is needed which is called the User Experience Questionnaire (UEQ). UEQ was designed by Laugwitz, Schreiber, and Held in 2005 and is available in more than 30 languages, including Indonesian, and can be used without paying a license. "User Experience Questionnaire (UEQ)" can be understood as ("an evaluation method for measuring user experience". According to the definition of ISO 9241, user experience is "the user's views and reactions arising from the use or anticipated use of a system, product or service".This explanation highlights that user experience includes not only the interactions that occur, but also the user's expectations and views prior to use. UEQ question items are semantically different and use a 6-point response scale. They

consist of pairs of terms with opposite meanings that encompass a semantic dimension. For example, the stimulus scale is attractiveness, users' general impression of the product. For example, annoying or unpleasant, good or bad, undesirable or pleasant, attractive or unattractive, friendly or unfriendly. Perspicuity, Users feel that the product allows them to achieve their goals quickly and efficiently. There is an opinion that the organization of the product interface. Such as: impractical or practical, organized or messy. Efficiency, user responses regarding the ease of use of the product. For example, incomprehensible or understandable, easy to learn or difficult to learn, complicated or simple, clear or confusing, etc. Dependability, the user's sense of security and control when interacting with the product. For example, unpredictable or predictable, disruptive or supportive, safe or unsafe, appropriate or inappropriate. Stimulation, users give the impression that using this product is very interesting and enjoyable. Such as: valuable or low, boring or fun, uninteresting or interesting, motivating or demotivating. Novelty, users give the impression that the product design is innovative, creative and able to attract attention. Such as, creative or boring, inventive or conventional, ordinary or sophisticated, conservative or innovative. Based on the results obtained, this research will answer previously formulated problems, such as whether Shopee provides a better user experience than Tokopedia [4].

UEQ Data Analysis Tool was designed by Dr. Martin Schreep with the aim of simplifying the UEQ analysis process. Analysis of information obtained from the UEQ questionnaire was carried out with the help of the UEQ Data Analysis Tool [5]. Data received from participants via questionnaires is then entered into the UEQ Data Analysis Tool [6], [7]. In assessing application quality, the User Experience Questionnaire (UEQ) utilizes six distinct evaluation dimensions: Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty**.** To fulfill the objectives of this study, respondents are required to complete the questionnaire, thereby providing structured insights into their experiences with the application [8]. To process the data, researchers simply upload the data into an Excel worksheet which can be downloaded on the ueq-online.org website. The statistical data processing process will be carried out automatically, allowing analysis of the results of the completed questionnaires. According to [9] stated that the more data obtained, the better and more consistent the conclusions that can be formulated. In evaluating a product, data from around 20 to 30 people is needed. This amount is sufficient to produce consistent results. Considering that the indicators used come from new products, the products must be able to achieve good categories on all scales. In simple terms, the Likert scale is used to find out how much someone agrees or disagrees with a statement. Respondents were asked to express the extent to which they agreed or disagreed with a statement that had been prepared systematically.

2. Research Methodology

2.1. Research Flowchart

In its implementation, this research used distributing questionnaires via Google Form as a step get answers from the respondents. The data obtained will be carried out by the data first before can be used in this research following the research flow that has previously been structured as follows shown in the flowchart as presented in Figure 1.

2.2. Data processing process

The UEQ questionnaire consists of 26 questions and assesses 6 attractiveness factors in pragmatic quality aspects such as clarity (perspicuity), efficiency (efficiency), and accuracy (dependability), along with hedonic quality aspects which include stimulation (stimulation) and novelty (novelty) used to analyze the UEQ measurement results by converting data from respondent responses in the Shopee application. The average per person is then calculated on the Shopee application and utilizes the UEQ scale for research findings and comparisons. The evaluation process using UEQ begins with questions about using the Shopee application or platform. The goal is to obtain a better response from detailed UEQ results. After that, respondents filled in the UEQ according to the impression they felt when using the application, such as features, appearance, promos, and so on. After using the application, respondents filled out the UEQ questionnaire which was given via Google Form or distributed to Shopee application users. Completing the UEQ follows applicable regulations, where point 7 is not always the highest score in the questionnaire. The data that has been obtained from respondents is then input into the UEQ Data Analysis Tool to calculate scores. Reliability testing on questionnaire data was carried out using the Cronbach's Alpha coefficient, which measures the consistency of the six factor scales. The data acquisition process uses UEQ as presented in Figure 2.

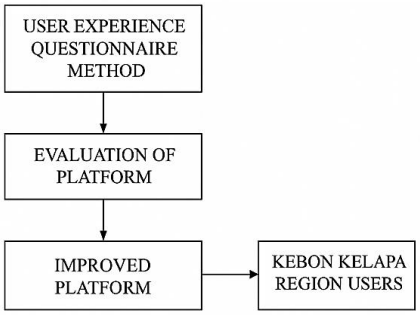

Figure 1. Structured Research Flow

Figure 2. Data Collection Process Using UEQ

Table 1. Likert Scale Statement

Score	Attitude Statement Score
1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

User Experience (UX) refers to the overall experience and perception that users have when interacting with a product or technology [10]. UX plays a crucial role in product or technology development, serving as a valuable guide for developers to focus on meeting user needs [11]. The most important step in the research carried out is to focus on literature that is relevant to the User Experience Questionnaire (UEQ) method and references based on similar previous research results to obtain a theoretical basis for the problem under study.

As an urban area, Kebon Kelapa Subdistrict has the characteristics of a society that is quite heterogeneous in socio-economic terms, education level and access to technology. This has a direct impact on the way citizens access digital services, including the Shopee platform. In recent years, the level of use of online shopping applications in this region has increased in line with the digitalization trend and the need for easy shopping without having to go directly to a physical store. By selecting this location as a research object, the author hopes to obtain a comprehensive picture of user perceptions and experiences of the Shopee application in the social context of urban society. The evaluation was carried out using the User Experience Questionnaire (UEQ) method to assess how well this application can provide an effective, efficient and enjoyable experience for its users who live in the Kebon Kelapa Village area.

2.3. Population and Research Sample

According to [12] the overall focus of the study and research topic is referred to as the population. Researchers can use samples taken from the population if the population is large, and it is not possible for researchers to analyze everything in the population, for example due to limited funds, energy and time. The population in this study are users of the Shopee platform in the Kebon Kelapa sub-district area, both those who have been using it for a long time and those who are new, where some of them were taken as respondents by applying the Slovin formula to determine the sample size as follows (1).

$$n = \frac{N}{1+N\,(e)^2} \quad (1)$$

Information:
n = Number of samples
N = Number of population
e = Margin of error

In this study, the sample consisted of **120 active users** of the Kebon Kelapa region who had previously interacted with the startup platform. The data were collected using the **User Experience Questionnaire (UEQ)**, which measures six main variables: **attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty**. During data collection, some responses showed **minor inconsistencies and potential noise**, such as incomplete answers or variations caused by users' different levels of digital literacy. These cases were carefully reviewed to ensure the overall reliability and validity of the dataset [13]. The key parameters affecting the HTC include fluid density, velocity, thermal conductivity, viscosity, and the addition of nanoparticles to the base fluid.

2.4. Questionnaire Feasibility Test

By applying the Pearson Product Moment correlation measurement, this research uses a validity test to evaluate whether the questions asked really measure the aspect in question (valid) [14]. This method relates each question to the total value of all the other questions. One type of analysis used to search for relevant hypotheses is the Pearson Product Moment correlation approach. The data collection applied in the Pearson Product Moment correlation uses a formula that is applied, in particular.

$$r_{xy} \frac{N(\sum XY)-(\sum X)(\sum Y)}{\sqrt{N(\sum X^2-(\sum X)^2)N(\sum Y^2-(\sum Y)^2)}} \quad (2)$$

Information:
r_{xy} = Correlation coefficient between X and Y.
N = Number of respondents (sample)
X = Score of a certain number of items
Y = Total score

Benchmarks in interpreting the degree of validity of the instrument [15], presented in Table 2.
The conclusion for rxy is compared with the r product moment table at a significant level of 5% if rxy > r table then the research instrument is considered valid, conversely if rxy < r table then the instrument is invalid.

2.5. Reliability Test

In this study, reliability testing aims to evaluate whether the data collected through a survey is reliable and trustworthy and reflects appropriate information. Reliability testing was carried out by analyzing the Cronbach's Alpha coefficient value for each variable. Below is the formula used to calculate reliability with the alpha coefficient.

$$a = \frac{k}{k-1}\left\{1 - \frac{\sum s_i^2}{s_t^2}\right\} \quad (3)$$

Information:
α = Cronbach's Alpha value
k = Number of question items
$\sum s_i^2$ = Number of variants for each item
s_t^2 = Total variance

Table 2. Interpretation of Validity

Coefficient Criterion	Validity Criterion
0,80 < r ≤ 1,00	Very High
0,60 < r ≤ 0,80	High
0,40 < r ≤ 0,60	Medium
0,20 < r ≤ 0,40	Low
0,00 < r ≤ 0,20	Very Low
r ≤ 0,00	Invalid

2.6. Evaluation of UEQ measurement results

For measurement, the UEQ questionnaire was used, consisting of 26 questions to assess six aspects attractiveness, clarity, efficiency, accuracy, stimulation, and novelty. The UEQ instrument was then used to process respondent data. Results from the Shopee application were then obtained by analyzing the data processing results. The steps in processing UEQ data are: from the questionnaire data from Shopee application users entered into UEQ Tools, then a data transformation or conversion process is carried out to obtain the response weight value. After that, the Means per Person calculation will be carried out on the Shopee application data, and then an average will be generated for each aspect or UEQ scale.

2.7. Calculating Means Per Person on the Shopee Platform

Calculating means per person on the Shopee platform is done using UEQ Tools. After data transformation, the mean per person is calculated on the Shopee platform data. This will then yield an average result for each aspect or UEQ scale [9].

The assessment and comparison results on the Shopee platform are based on the UEQ scale, and the average results are based on all questions that have been classified by each UEQ scale on the Shopee application, as presented in Table 3.

3. Results and Discussions

3.1. Respondent Results

The people interviewed in this study were grouped based on age, gender, employment status, and other aspects, specifically the Shopee app. With a population of 11,000 in the Kebon Kelapa area, 0.1% of the population was selected, resulting in 100 respondents to be surveyed. The survey also included questions about their frequency of use of the app, their level of satisfaction with the app, their experience with it, and their reasons for choosing it as their favorite.

The data in Figure 3 shows that the largest age group is 20-25 years with a total of 62 people, with a presentation of 62%, then for the age of 15-20 years there are 22 people, with a presentation of 22%, then for the age group of 25-30 years there are 3 people, with a presentation of 3%, finally the age group >30 years there are 13 people, with a presentation of 13%.

Table 3. Average (mean) rating scale on the questionnaire

Average Value Range	Description
>0,8	Positive Evalution
-0,8 – 0,8	Neutral Evalution
<-0,8	Negative Evalution

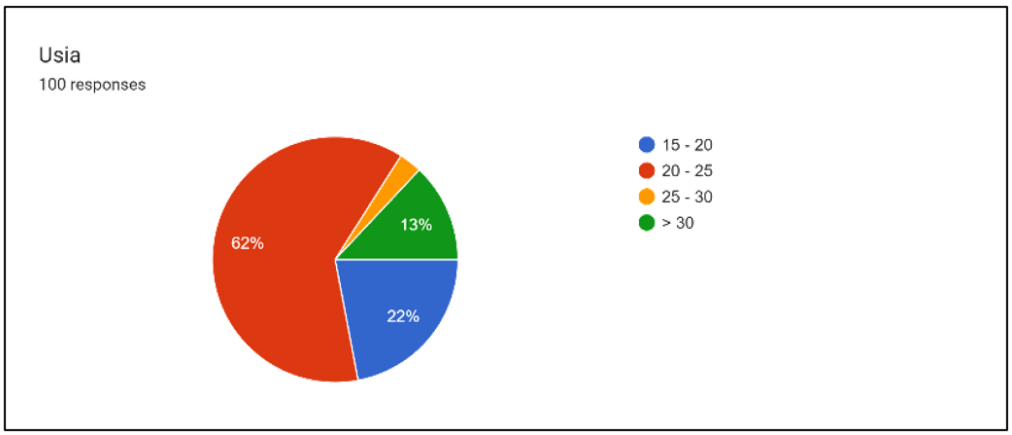

Figure 3. Respondent Age

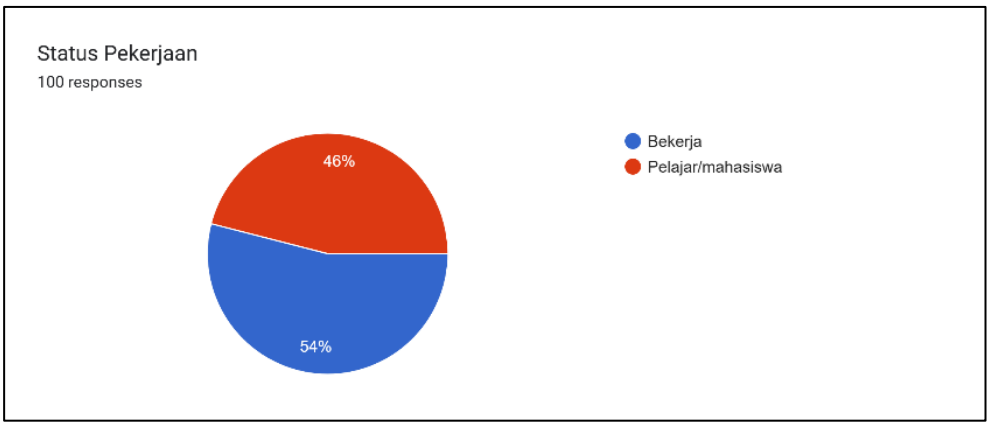

Figure 4. Respondent Gender

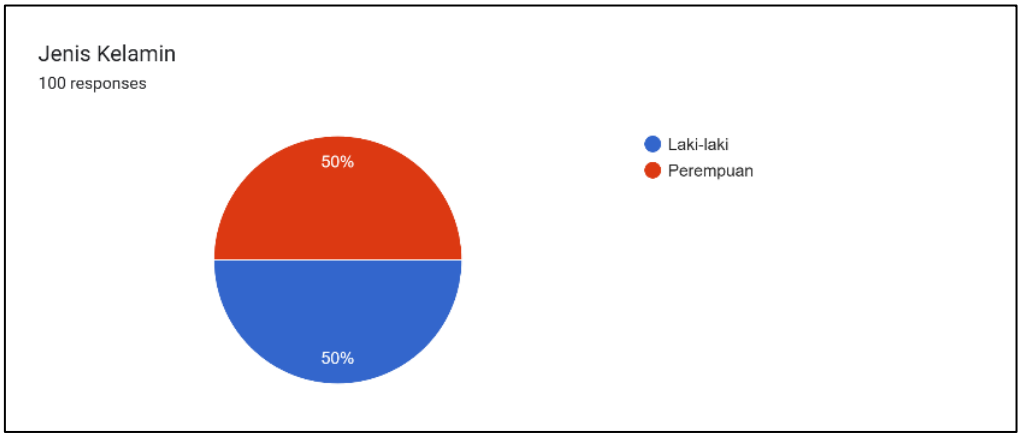

Figure 5. Respondent's Employment Status

The data in Figure 4 shows that the number of male respondents reached 50 people, representing 50% of the sample, while the number of female respondents also reached 50 people, representing 50%. The total number of respondents was 100 people. The data in Figure 5 shows that 54 respondents (54%) were employed, and 46 (46%) were students.

3.2. Population and Sample

The population (N) was precisely determined based on the population of 11,000 people in the Kebon Kelapa sub-district. The error tolerance (e) in this study was 10% or 0.1. Based on calculations using the Slovin formula, a minimum sample size of 100 people was obtained for the Shopee application in the Kebon Kelapa sub-district. The Slovin formula means that the sample size with a known population (N) is 11,000 people in the Kebon Kelapa sub-district. The error tolerance limit (e) in this study is 10% or 0.1.

$$n = \frac{11.000}{1+11.000(0,1)^2} = 100 \quad (4)$$

Based on the calculations carried out, a sample size of at least 100 respondents was obtained for the Shopee application.

3.3. Research Materials and Tools

The tools used in this study were SPSS to test validity and reliability, Google Forms to compile and distribute the questionnaire, and the Data Analysis Tool to analyze the UEQ data. UEQ calculations were performed using Microsoft Excel. Mendeley was used to manage citations for the thesis, and Microsoft Word was used to compile the thesis. The research sample consisted of respondents who were all Shopee app users in the Kebon Kelapa Village. The instrument used was the UEQ questionnaire, which contains 26 statements. Six scales were used: attractiveness, clarity, efficiency, accuracy, stimulation, and novelty, when using the Shopee app to obtain respondent answers or questionnaire data regarding user experiences with the Shopee app, as presented in Table 4.

Table 4. Application Respondents

NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	6	7	6	2	2	4	5	6	2	3	4	2	6	5	5	5	2	4	3	6	2	6	2	2	1	5
2	7	5	2	2	1	7	7	7	3	4	7	3	6	7	4	7	2	1	1	7	1	7	1	1	3	6
3	5	5	5	4	4	4	4	5	6	6	5	6	6	5	5	6	6	5	6	6	5	6	6	5	6	6
4	5	5	5	2	2	5	5	5	2	2	5	2	5	5	5	5	2	2	2	5	2	5	2	2	2	5
5	7	3	7	1	1	7	7	7	1	7	7	1	7	7	7	7	1	1	1	6	1	7	1	1	1	7
6	7	7	7	1	1	7	7	7	1	7	7	1	7	7	7	7	1	1	1	7	1	7	1	1	1	7
7	7	7	7	1	1	7	1	4	1	4	7	1	6	7	7	7	1	1	1	7	1	7	1	1	1	7
8	7	3	5	1	1	7	7	7	1	7	7	1	7	7	7	7	1	1	1	7	1	7	1	1	1	7
9	6	6	5	6	5	6	6	4	1	7	5	1	6	6	6	6	1	1	2	6	1	5	2	1	3	6
10	5	5	7	4	3	5	4	3	3	3	5	1	5	5	6	7	1	1	4	6	2	6	3	3	4	5

Table 5. Application Validity Test

No. Statement	Value r count	*r* Table	Description
1.	0,273	>0,197	Valid
2.	0,274	>0,197	Valid
3.	0,265	>0,197	Valid
4.	0,600	>0,197	Valid
5.	0,576	>0,197	Valid
6.	0,287	>0,197	Valid
7.	0,253	>0,197	Valid
8.	0,304	>0,197	Valid
9.	0,629	>0,197	Valid
10.	0,549	>0,197	Valid
11.	0,301	>0,197	Valid
12.	0,574	>0,197	Valid
13.	0,298	>0,197	Valid
14.	0,276	>0,197	Valid
15.	0,280	>0,197	Valid
16.	0,303	>0,197	Valid
17.	0,515	>0,197	Valid
18.	0,532	>0,197	Valid
19.	0,526	>0,197	Valid
20.	0,265	>0,197	Valid
21.	0,550	>0,197	Valid
22.	0,224	>0,197	Valid
23.	0,551	>0,197	Valid
24.	0,448	>0,197	Valid
25.	0,479	>0,197	Valid
26.	0,245	>0,197	Valid

Validity testing was conducted to determine whether the questionnaire used to measure the research variables was valid or not. In this study, the validity test used the Pearson Bivariate Correlation method and a significant r table at 5%. The validity test was conducted involving 100 respondents on the Shopee application, and the r table value was 0.197. The measuring instrument is said to be valid if the calculated r > r table, and conversely, if the calculated r < r table, the measuring instrument is declared invalid. The results of the validity test on the Shopee application using SPSS software can be seen in the Table 5.

The results of the Shopee application validity test show that all elements of the statements in the questionnaire are considered valid. Reliability testing is conducted to ensure the consistency of the measuring instrument, ensuring its reliability and usability during repeated measurements in a study. Reliability testing is also conducted to determine the validity of respondents' responses, which may or may not be used in subsequent processing. An instrument is considered reliable if it can be trusted and relied upon as an appropriate measurement tool. In this study, reliability testing was conducted by calculating the Cronbach's Alpha coefficient in the Shopee application. The analysis results were calculated using SPSS software, yielding the Cronbach's Alpha coefficient in the Shopee application. These values were then interpreted according to the reliability standards listed in Table 6.

Table 6. Application Reliability Test

Cronbach'Alpha	N of Items	Reliability Interval	Category
0,794	26	$0,60 < r \leq 0,80$	High

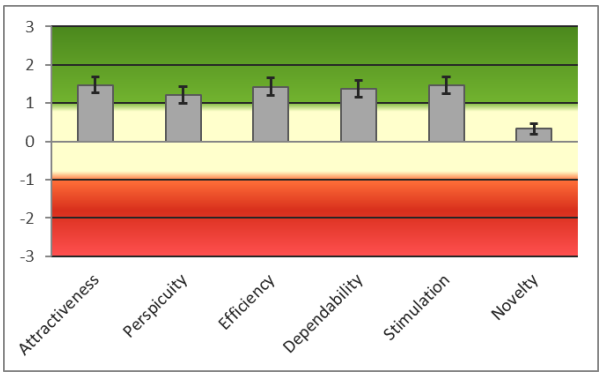

Figure 6. Average Impression Scale Graph

Table 7. Mean UEQ Results

Pragmatic and Hedonic Quality	
Attractiveness	1,48
Pragmatic Quality	1,34
Hedonic Quality	0,90

The reliability test on the Shopee application was conducted by collecting all answers from respondents for each valid statement item, which amounted to 26 items, and obtained a Cronbach's Alpha value in the Shopee application of 0.794. The Cronbach's Alpha reliability level described in Table 6 for the Shopee application is in the range of $0.60 < r \leq 0.80$, which concludes that the reliability of the questionnaire is high. The statement and answer components of the questionnaire are declared reliable, so that further data processing can be carried out.

3.4. Average Results and Variance of User Experience Ratings

Results of user experience evaluation using the UEQ scale for Shopee app users in the Kebon Kelapa sub-district. The average or mean value of the scale obtained based on all questions that have been grouped for each UEQ scale for Shopee app users, as presented in Figure 6. The average impression value between -0.8 and 0.8 is a normal evaluation value, a value > 0.8 means a positive evaluation, and <-0.8 indicates a negative evaluation, it can be concluded that Shopee application users in the Kebon Kelapa Subdistrict area have almost positive impressions on all scales, namely attractiveness, clarity, efficiency, accuracy, stimulation, and novelty. The confidence intervals for these items and scales are shown with 5% confidence limits for the scale mean, as well as the mean for each individual item. The confidence interval is an indicator of how precisely the scale mean is estimated. The smaller the confidence interval, the more accurate the estimate, and the more reliable the results. The width of the confidence interval is influenced by the amount of data available and the degree of uniformity in people's assessments of the product being evaluated. If their opinions tend to be uniform, the confidence interval will be smaller.

The measurement results from the study can be grouped into three categories: Attractiveness, a pure covalence aspect; Pragmatic Quality, which reflects the quality of user interaction related to tasks or goals; and Hedonic Quality, which reflects satisfaction with the product. The UEQ results require further validation because they are calculated based on the mean and variance of the normalized variance of the collected data using a predetermined scale. The Attractiveness score was 1.48, Pragmatic Quality was 1.34, and Hedonic Quality was 0.90, as presented in Table 7.

4. Conclusion

The results of this study obtained an assessment of user experience and obtained user perceptions of the use of the Shopee application in the Kebon Kelapa Village area. The measurement of user experience was carried out using the UEQ questionnaire consisting of 26 questions and there are 6 aspects of user experience, namely attractiveness, clarity, efficiency, accuracy, stimulation, and novelty, it can be concluded that this study was successful in assessing user experience from the use of the Shopee application in the Kebon Kelapa Village area in each aspect of the User Experience Questionnaire (UEQ). Based on the results of the benchmark assessment obtained from each aspect of the UEQ using the UEQ Data Analysis Tool, it is known that the Attractiveness aspect (1.48) is in the above average category, the Efficiency aspect (1.21) is in the above average category, the Perspicuity aspect (1.43) is in the above average category, the

Dependability aspect (1.38) is in the above average category, Stimulation (1.47) is in the good category, and Novelty (0.33) is in the below average category.

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