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User Experience Analysis on the DANA Application Using the User Experience Questionnaire (UEQ) Method

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Abstract

Technology has become an integral part of man's daily life by the growth and development of technology down to the present day brought many changes to mankind's survival. One of the changes to human life is the presence of a digital wallet application that can make transaction payment systems such as the application of DANA easier. The study uses the User Experience Questionnaire (UEQ) method. The study aims to identify the level of user experience of applications of DANA on Prabumulih university students who use apps based on variables attractiveness, variables efficiency, variables dependability, variables stimulation and novelty variables. The results of this study could be said to be positive, but in some variables it can be enhanced again.

Keywords: *technology, DANA applications, User Experience Questionnaire (UEQ), student*

1. Introduction

Technology has become an inseparable part of human daily life with the growth and development of technology to date bringing many changes to human survival. One of the changes for human life is the presence of a digital wallet application which can make payment system transactions easier because payments can use QR scans and really save the user's time. One variant of the digital wallet is the DANA application. Based on user ratings of the DANA application on the Play Store, there are many unfavorable reviews given by users due to problems in using the DANA application. Unfavorable reviews of an application can reduce the average rating of the application, thereby influencing public opinion regarding whether the features in the application function well or not. The existence of obstacles in the quality of the system, services, or use of features in the application can disrupt the user experience of the application so that users may no longer feel interested in using the system and services in the application. In ensuring the user experience in interaction, it is necessary to conduct research regarding the user experience in the DANA application using the User Experience Questionnaire (UEQ).

2. Literature Review

2.1. Analysis

Analysis is the systematic decomposition of a subject in determining the parts, relationships between parts and their relationships in a comprehensive manner to obtain proper understanding and insight [1].

2.2. User Experience

User experience is the user's overall experience while interacting with a product which includes emotions, perceptions and user assessments of the interface and content [2].

2.3. DANA Application

The DANA application is an Indonesian digital wallet program created to ensure the speed and security of all non-cash and non-card digital transactions, both online and offline [3].

2.4. User Experience Questionnaire (UEQ)

User Experience Questionnaire (UEQ) is a method of measuring user response questionnaires when interacting with a product to express emotions, impressions and attitudes [4].

2.5. UEQ Data Analysis Tool

UEQ Data Analysis Tools is a tool used to simplify the data analysis and processing process, developed by Dr. Martin Schhrepp which can be downloaded on the official UEQ website https://www.ueq-online.org/.

3. Research Method

3.1. Quantitative Descriptive Method

Quantitative descriptive research is a type of research that aims to show the results of collecting quantitative or statistical data, such as surveys. Without calculating or checking the relationship with treatment or other variables [5].

3.2. Data Source

The data sources used in this research are primary data sources and secondary data sources. Primary data sources are answers to questionnaires distributed to respondents and interviews with resource persons. Meanwhile, secondary data sources include e-books, journals and articles on the internet.

3.3. Population and Sample

The population in this study were Prabumulih University students who used the DANA application. The sample in this study was determined using the Slovin formula, with the formula below:

$$\text{Rumus: } n = \frac{N}{1+Ne^2}$$

Information:
N = Number of Population
n = Number of Samples
e = Error tolerance limit (5% = 0.05)

Sample calculation

$$n = \frac{N}{1+Ne^2} = \frac{217}{1+217(0{,}05)^2} = \frac{217}{1+217(0{,}0025)} = \frac{217}{1+0.5425} = \frac{217}{1.5425}$$
$$= 140.68$$

From the calculation above, it can be seen that the sample results in this study were 140.68 people. So the sample in this study was 141 people.

3.4. Differential Semantic Scale

The six UEQ variables are in the form of semantic differentials, where each item has the opposite meaning (for example: troublesome-pleasant). This scale has 7 stages which have their own values. Negative answers have values ranging from -3 to -1, neutral answers have a value of 0, and positive answers have values ranging from +1 to +3. The following is an example of the list and filling in of questions asked by UEQ, namely:

	1	2	3	4	5	6	7		
menyusahkan	○	○	○	○	○	○	○	menyenangkan	1
tak dapat dipahami	○	○	○	○	○	○	○	dapat dipahami	2
kreatif	○	○	○	○	○	○	○	monoton	3
mudah dipelajari	○	○	○	○	○	○	○	sulit dipelajari	4
bermanfaat	○	○	○	○	○	○	○	kurang bermanfaat	5
membosankan	○	○	○	○	○	○	○	mengasyikkan	6
tidak menarik	○	○	○	○	○	○	○	menarik	7
tak dapat diprediksi	○	○	○	○	○	○	○	dapat diprediksi	8
cepat	○	○	○	○	○	○	○	lambat	9
berdaya cipta	○	○	○	○	○	○	○	konvensional	10
menghalangi	○	○	○	○	○	○	○	mendukung	11
baik	○	○	○	○	○	○	○	buruk	12
rumit	○	○	○	○	○	○	○	sederhana	13
tidak disukai	○	○	○	○	○	○	○	menggembirakan	14
lazim	○	○	○	○	○	○	○	terdepan	15
tidak nyaman	○	○	○	○	○	○	○	nyaman	16
aman	○	○	○	○	○	○	○	tidak aman	17
memotivasi	○	○	○	○	○	○	○	tidak memotivasi	18
memenuhi ekspektasi	○	○	○	○	○	○	○	tidak memenuhi ekspektasi	19
tidak efisien	○	○	○	○	○	○	○	efisien	20
jelas	○	○	○	○	○	○	○	membingungkan	21
tidak praktis	○	○	○	○	○	○	○	praktis	22
terorganisasi	○	○	○	○	○	○	○	berantakan	23
atraktif	○	○	○	○	○	○	○	tidak atraktif	24
ramah pengguna	○	○	○	○	○	○	○	tidak ramah pengguna	25
konservatif	○	○	○	○	○	○	○	inovatif	26

Fig. 1: UEQ Question List

4. Result and Discussion

4.1. Validitas Test

The validity test uses the condition that if r count > r table then the item is declared valid, conversely if r count < r table then the item is declared invalid. Then the following results can be obtained:

Table 1: Validitas Test

Variable	Code	R table	R count	Information
Attractiveness	A1	0.166	0.295	Valid
	A2	0.166	0.472	Valid
	A3	0.166	0.289	Valid
	A4	0.166	0.192	Valid
	A5	0.166	0.558	Valid
	A6	0.166	0.523	Valid
Perspicuity	P1	0.166	0.202	Valid
	P2	0.166	0.688	Valid
	P3	0.166	0.241	Valid
	P4	0.166	0.576	Valid
Efficiency	E1	0.166	0.467	Valid
	E2	0.166	0.241	Valid
	E3	0.166	0.188	Valid
	E4	0.166	0.473	Valid
Dependability	D1	0.166	0.188	Valid
	D2	0.166	0.222	Valid
	D3	0.166	0.531	Valid
	D4	0.166	0.531	Valid
Stimulation	S1	0.166	0.555	Valid
	S2	0.166	0.211	Valid
	S3	0.166	0.199	Valid
	S4	0.166	0.381	Valid
Novelty	N1	0.166	0.330	Valid
	N2	0.166	0.586	Valid
	N3	0.166	0.437	Valid
	N4	0.166	0.432	Valid

The table above shows that the validity test results for each variable are valid, and all r count values are greater than r table. Therefore, all statements can be used in research because the results of all the statements above are valid.

4.2. Reliability Test

Reliability test uses Cronbach's Alpha analysis technique. Cronbach's Alpha value is considered reliable if the value is greater than 0.60. The results are as follows:

Table 2: Reliability Test

Variabel	Cronbach's Alpha	Information
Attractiveness	0.83	Reliable
Perspicuity	0.78	Reliable
Efficiency	0.81	Reliable
Dependability	0.88	Reliable
Stimulation	0.88	Reliable
Novelty	0.71	Reliable

4.3. UEQ Test

based on the average results on all questions arranged according to scale. Values between -0.8 and 0.8 are considered normal values, values greater than 0.8 are considered positive values, and values lower than 0.8 are considered negative values. Thus, it can be concluded that the DANA application user experience is positive, as shown in fig 2:

UEQ Scales (Mean and Variance)		
Daya tarik	1,751	1,03
Kejelasan	1,988	1,12
Efisiensi	1,950	0,94
Ketepatan	1,824	1,16
Stimulasi	1,922	1,01
Kebaruan	1,693	1,12

Fig. 2: Scale Average

Then the UEQ Benchmark results show a comparison of the average results of UEQ calculations in this study, which can be seen in fig 3 and the graph in fig 4:

Scale	Mean	Comparisson to benchmark	Interpretation
Daya tarik	1,75	Good	10% of results better, 75% of results worse
Kejelasan	1,99	Good	10% of results better, 75% of results worse
Efisiensi	1,95	Excellent	In the range of the 10% best results
Ketepatan	1,82	Excellent	In the range of the 10% best results
Stimulasi	1,92	Excellent	In the range of the 10% best results
Kebaruan	1,69	Excellent	In the range of the 10% best results

Fig. 3: UEQ Benchmark DANA Application

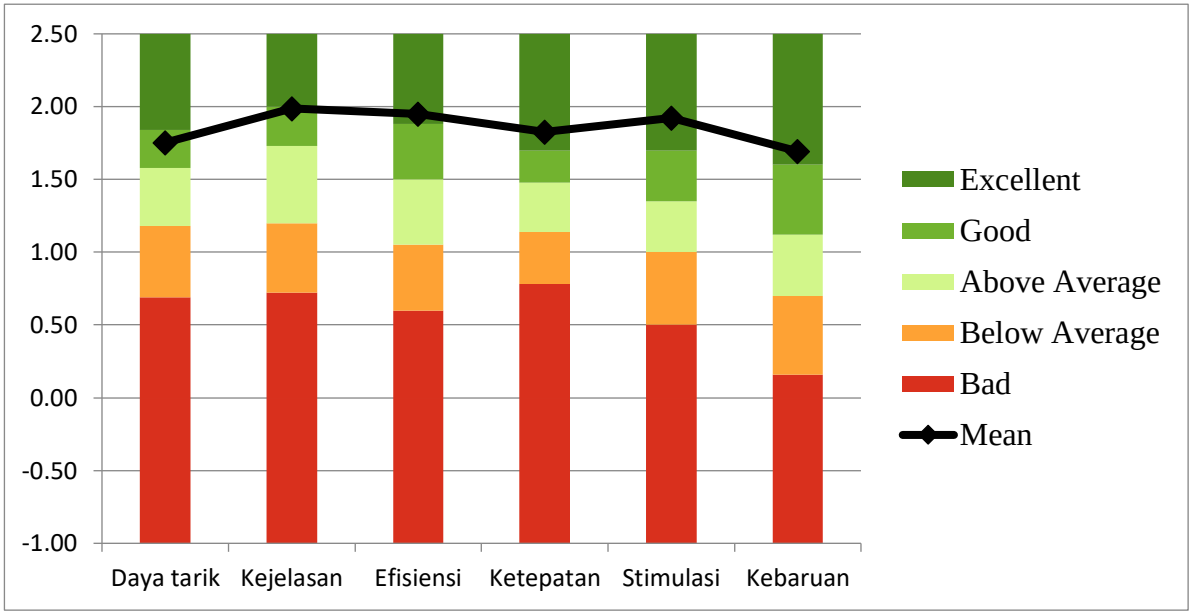

Fig. 4: DANA Application UEQ Benchmark Chart

5. Conclusion

Based on the overall results of research conducted to analyze the level of user experience in the DANA application for Prabumulih University students who use the DANA application using the User Experience Questionnaire (UEQ) method, distributing questionnaires and calculations using the UEQ Data Analysis Tool (DAT) version 12 So, based on the results of this analysis, the researcher drew the following conclusions:

1. Judging from the benchmark results, it is known that the attractiveness variable obtained "good" results with a mean of 1.74, the perspicuity variable obtained "good" results with a mean of 1.97, the efficiency variable obtained "excellent" results. with a mean of 1.96, the dependability variable obtained an "excellent" result with a mean of 1.93, the stimulation variable obtained an "excellent" result with a mean of 1.93 and the novelty variable had an "excellent" result with a mean 1.71.
2. Even though most of the variables are rated as excellent, there are still variables that have low scores such as the attractiveness variable and the perspicuity variable due to the lack of clarity in navigation, information structure and the DANA application interface.

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