# Analysis Level of Public Satisfaction with JKN Mobile Application at the BPJS Kesehatan Surabaya Office

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Abstract: Health is a human right and one of the elements of well-being that must be realized by the ideals of the nation. It is necessary to establish an organizing body in the form of a public service legal entity, one of which is BPJS Kesehatan which aims to provide guarantees in the form of health protection to the public, BPJS Kesehatan also continues to develop itself with existing technology, such as the latest breakthrough, namely the presence of the JKN Mobile application which is a form of digital transformation of the BPJS Kesehatan business model, which used to be all forms of administration carried out in the Office, But now it can be done anywhere and anytime without any time limit (self-service). The purpose of this study is to determine the level of satisfaction and user experience of the JKN Mobile application, with the method used, namely the User Experience Questionnaire (UEQ). The results of the analysis obtained that the JKN Mobile application from 6 aspects of assessment, namely attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty, the JKN Mobile application has an assessment above 0.8 so it can be concluded that the JKN Mobile application has a positive assessment for users.

## Keywords—Service Quality, JKN Mobile, BPJS Kesehatan Surabaya, User Experience Questionnaire (UEQ)

## 1. Introduction

Health is a human right and one of the elements of welfare that must be realized by the ideals of the Indonesian nation as referred to in Pancasila and the UUD 1945 Constitution of the Republic of Indonesia. It is necessary to establish an organizing body in the form of a public service legal entity based on the principles of cooperation, non-profit, openness, prudence, and mandatory participation, and the results of the management of the Social Security Fund are fully needed for the development of participant interest programs [8]. In 2011, Law No. 24 concerning the Social Security Organizing Agency (BPJS) was established, aiming to provide guarantees in the form of health protection so that the public could get health maintenance benefits. BPJS Kesehatan has organized a program, namely the National Health Insurance since January 1, 2014. Data from BPJS Kesehatan, the number of participants of the National Health Insurance in Indonesia as of August 31 2022, amounted to 243,282,029 people.

BPJS Kesehatan also continues to develop itself with existing technology, as can be seen from the latest breakthrough. namelv the presence of the JKN Mobile application. The JKN Mobile Application is a form of digital transformation of the BPJS Kesehatan business model, which used to be all forms of administration carried out at the BPJS Kesehatan Office but now can be used anywhere and anytime without any time limit (self-service). The JKN Mobile Application was released by the director of BPJS Kesehatan November 16. 2017. on users JKN Mobile application can provide several conveniences to the public, namely the ease of changing personal data individually, making payments, the ease of knowing family participant data information, etc [5].

Research related to the UEQ method was conducted by Wibiansya, et al [1] who used the User Experience Questionnaire on users of the information system application for the Paperless Puskesmas Tarik in Sidoarjo. In usability found testing. it was that in the aspect of effectiveness and efficiency, 100% results were obtained, which means that users can complete the tasks given. Meanwhile, in the satisfaction aspect, a result of 68.12 was obtained, which means that the level of satisfaction from application users is at a marginal high. Furthermore, testing using UEO produced values on the perspicuity aspect, dependability aspect, attractiveness aspec t, efficiency aspect, stimulation aspect, and novelty aspect had an average of 1.137 which means that application users tend to give assessments in a positive direction.

Therefore, researchers want to develop further research related to public satisfaction with the JKN Mobile application at the BPJS Kesehatan Surabaya Office with the User Experience Questionnaire (UEQ) method.

## 2. Literature Review

## 2.1 BPJS Kesehatan

The Social Security Organizing Agency or commonly called BPJS Kesehatan is a legal entity that provides national health insurance (JKN) for all people in Indonesia. Health insurance itself is a guarantee in the form of health protection so that people get health maintenance benefits and protection in meeting basic health needs given to everyone who has paid contributions or has been paid by the government. BPJS Kesehatan also has a vision and mission, namely realizing quality health insurance and providing the best service to participants and the Indonesian people [2].

## 2.2 Customer Satisfaction

Public satisfaction is the main factor that must be considered, especially by public service because public satisfaction will determine the success of the government in providing these public services. Public satisfaction or customer satisfaction according to Tjiptono [12] is a response from the community or customers to the evolution of the perceived discrepancy between previous expectations and the actual performance of the product which is felt that in this competition more and more manufacturers are involved in meeting the needs and also the desires of customers who are required to place an orientation on customer satisfaction on the first goal.

## 2.3 JKN Mobile Application

Based on the Directorate of State Budget Preparation [3] the definition of National Health Insurance (JKN) is a program that aims to provide certainty of comprehensive health insurance to all Indonesians so that the entire population can live healthy, productive, and prosperous lives.

On November 15, 2017, the Social Security Administration Agency (BPJS) for Health inaugurated an application called "*Mobile* JKN". *Mobile* JKN is here as a means to facilitate the needs of the community and JKN-KIS participants. According to Bayu, et al [4] the JKN *Mobile* Application is a form of digital transformation of the BPJS Kesehatan business model, which was originally a branch management activity or health institution, into a form that can be used to provide convenience, especially for participants anytime and anywhere, without any obstacles by place and time.

## 2.4 User Experience Questionnaire (UEQ)

According to Laugwitz, et al [6] User Experience Questionnaire (UEQ) is a research instrument used to process survey data related to user experience to conduct subjective quality assessment tests. The User Experience Questionnaire (UEQ) is part of the classic usability testing to obtain an extensive impression of the user experience from the usability aspect and the experience aspect [9]. UEQ is not only an overview of the use of a product but also user responses to the product so that pragmatic and impression measurements are produced.

The UEQ questionnaire consists of 26 items quoted from the study such as picture 1:

	k	2	3	-9.	15	Ű.	12		
menyusahkan	0	0	0	0	0	0	0	menyenangkan	4
tak dapat dipahami	0	D	0	0	0	0	0	dapat dipahami	73
kreatif	0	0	0	0	0	0	0	monoten	3
mudah dipelajari	0	0	Ö	0	0	0	Ó	salit dipelajari	- 4
bermanfaat	0	0	0	0	G	0	0	kurang bermanfaat	5
membosankan	0	0	Ó	0	0	0	Ó	mengasyikkun	6
tidak menarik	0	0	0	0	0	0	0	menarik	- 7
tak dapat diprediksi	0	0	0	0	0	0	0	dapat diprediksi	8
cepat	0	0	0	0	0	0	0	lambat	0
berdaya cipta	0	0	0	0	0	0	0	konvensional	- 11
menghalangi	0	0	0	0	Ó	0	0	mendiakung	13
baik	0	0	0	0	0	0	0	buruk	1
runit	0	0	Ö	0	0	0	0	sederhana	1
tidak disokai	0	0	0	0	0	0	0	menggembirakan	1
larim	0	0	0	0	0	0	0	terdepas	1
tidak oyaman	0	0	0	0	0	0	0	nyaman	.10
aman	0	0	0	0	0	0	0	tidak aman	1
memotivasi	0	0	0	0	0	0	0	tidak memotivasi	1
memenuhi ekspektaai	0	0	0	0	0	0	0	tidak memenohi ekspektasi	1
tidak efisien	0	0	Ó	0	0	0	0	efisien	- 2
jelas	0	0	0	0	0	0	0	membingungkan	2
tidak praktis	0	0	0	0	0	0	0	praktis	2
terorganisasi	0	0	0	0	0	0	0	berautakan	2
atraktif	0	0	0	0	0	0	0	tidak atraktif	- 2
ramah pengguna	0	0	0	0	0	0	0	tidak ramah pengguna	2
konservatif	0	0	Ó	0	0	0	0	inovwif	3

### Picture 1.UEQ Questionnaire

The 26 question items in figure 1 can be grouped into 6 scales [10]:

- a. Attractiveness is the general impression of users on the product, whether they like it or not.
- b. Perspicuity is is how much clarity a product is, for example, easy to understand or difficult to understand.
- c. Efficiency is how much the user can complete his task without great effort or efficiency, for example, sooner or later, practically or impractically.
- d. Dependability i.e. whether the user feels that he can control the interaction, i.e. predictable or unpredictable, supporting or hindering.
- e. Stimulation is how much motivation is to use the product, for example, useful or less useful, interesting or unattractive.
- f. Novelty is how much novelty a product is, for example, creative or uncreative, conservative or innovative

Attractiveness is a pure valence dimension, then for perspicuity, efficiency, and dependability is an aspect of pragmatic quality (directed to the goal), while stimulation and novelty of quality are hedonistic aspects (not directed to the goal). Based on the 26 aspects of UEQ measurement, it can be explained as follows:

- 1. Attractiveness Assessment numbers 1,12,14,16,24, 25
- 2. Perspicuity assessment numbers 2,4,13, 21
- 3. efficiency assessment numbers 9,20,22, 23
- 4. dependability assessment numbers 8,11,17, 19
- 5. Stimulation assessment. numbers 5,6,7, 18
- 6. Novelty assessment i.e. numbers 3,10,15, and 26

UEQ has several kinds of calculations in various sheets, namely sheet data, sheet results, scale

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consistency, and benchmarks. The step is that the data that has been filled in by the respondents is inputted and entered into the datasheet, then UEQ transforms the data, which is to change the number of data filled in by the respondents between the numbers 1-7 which is the number of scales into values of -3 to +3 where the number -3 indicates the most negative value and +3 indicates the most positive value. The assessment of UEQ data transformation is described in Table 1. Thus, data transformation is carried out by the given UEQ questions.

Table 1. Transformasi data UEQ

Nilai	Arti Nilai
+3	Highly Positive
+2	Quite Positive
+1	Positive
0	Neutral
-1	Negative
-2	Quite Negative
-3	Highly Negative

The next step is a sheet result that can show the overall result of the data that has been entered in the UEQ, which has the aim of calculating based on the results of data transformation into mean, standard deviation, variance, and UEQ. In addition, there is also a graph that shows the values of the 6 aspects of the UEQ assessment, which are divided into red, yellow, and green colors based on the assessment group, namely:

- 1. Red color : negative evaluation or negative assessment group with a value less than -0.8.
- 2. Yellow color : neutral evaluation or neutral assessment group with a value of -0.8 to +0.8
- 3. Green color : positive or positive assessment group with a value of more than +0.8

Furthermore, the UEQ consistency sheet also calculates the correlation value between each question item which is almost the same in each aspect of the assessment, besides that the number of alphas will also be calculated which shows the correlation in the assessment aspect in question. The UEQ defines Cronbach's alpha standard deviation value as more than 0.7 it can be said that the data is already quite consisten [11]. Furthermore, on the benchmark sheet, a graph is also obtained related to the interpretation results from measurable aspects. In the end, Benchmark can classify products into 5 categories per aspect namely, Excellent, Good, Above Average, Below Average, and Bad.

## 3. Methodology

## 3.1 Data and Data Sources

The source of data used in this study is primary data obtained by conducting surveys by distributing questionnaires directly and also interviews at the BPJS Kesehatan Surabaya Office from December 12 to December 26, 2022.

## 3.2 Data Collection Technique

The data collection technique in this study used purposive sampling by selecting respondents based on certain objectives and considerations. Because the population is unknow, the sample calculation uses the formula (Lemeshow, 1997) [7] as follow :

(1)

$$=\frac{Z_{1-\frac{\alpha}{2}}^{2}P(1-P)}{\alpha^{2}}$$

n = -Is known :

n : minimum number of samples

Z : normal distribution quartile value with significant level  $\alpha{=}5\%$ 

P : optimal estimation

d : sampling precision/ error rate

So that:

 $n = \frac{1,96^2(0,5)(0,5)}{0,1^2} = 96,04$ 

From the results of the calculation above, it is obtained that the minimum number of samples to be taken is 96 respondents.

## 4. Result

The User Experience Questionnaire (UEQ) method is a research instrument used to process survey data related to user experience to conduct subjective quality assessment tests. UEQ has several kinds of calculations in various sheets such as data sheets, results, scale\_consistency, and benchmarks.

The analysis of the sheet result is known for assessment and comparison of the average grade level of the 6 aspects of assessment with the highest value being three. This analysis was carried out to determine the extent of the average assessment of JKN Mobile application users in the community at the BPJS Kesehatan Surabaya Office on 26 questions based on 6 assessment aspects and can be explained as follows.

Tuble 2. Old Invenage					
UEQ Scales	Mean	Variance			
Attractiveness	2.352	0.29			
Perspicuity	2.093	0.44			
Efficiency	2.215	0.27			
Dependability	2.453	0.25			
Stimulation	2.420	0.38			
Novelty	2.310	0.29			

Table 2. UEQ Average

To get the overall UEQ average is obtained based on the average of the total number of questions. In the attractiveness aspect, it value of 2,352, in the perspicuity aspect, it value of 2,093, the efficiency aspect it value of of 2,215, in the dependability aspect it value of 2,453, in the stimulation aspect it value of 2,420 and finally, in the novelty aspect, it value of 2,310.

In the UEQ questionnaire, aspect of attractiveness assessment, 6 questions as follows:

 Table 3. Average Attractiveness

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Based on Table 3 items, the highest average value of attractiveness is found at 2.50 and the lowest average value is Good at 2.16

No	Question	Mean	Items
1	1	2.30	Delightfull
2	12	2.16	Good
3	14	2.50	Encouraging
4	16	2.39	Comfortable
5	24	2.31	Attractive
6	25	2.37	User Friendly

In the UEQ questionnaire, in the aspect of perspicuity assessment, there are 4 questions as follows: Table 4 Average Perspicuity

Table 4. Average Perspiculty							
No	Question	Mean	Items				
1	2	2.37	Understandable				
2	4	1.92	Easyto learn				
3	13	2.29	Simple				
4	21	1.79	Clear				

Based on Table 4 items the highest average value of the perspicuity aspect is Understandable at 2.37 and the lowest average value is Clear at 1.79

In the UEQ questionnaire, in the aspect of efficiency assessment there are 4 questions as follows: Т

<b>Table 5.</b> Average Efficie	ency	
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No	Question	Mean	Items
1	9	1.35	Fast
2	20	2.50	Eficient
3	22	2.52	Practical
4	23	2.49	Organized

Based on Table 5 items, the highest average value of the efficiency aspect is Practical at 2.52, and the lowest average value is Fast at 1.35

In the UEQ questionnaire, the aspect in of dependability assessment there are 4 questions as follows: Table 6. Average Dependability

	Tuble of Attended Dependuolity						
No	Question	Mean	Item				
1	8	2.38	Predictable				
2	11	2.27	Support				
3	17	2.67	Safe				
4	19	2.49	Meeting Expectations				

Based on 5 items, the highest average value of the dependability aspect is Safe at 2.67 and and the lowest average value is Support at 2.27

In the UEQ questionnaire, in the aspect of stimulation assessment, there are 4 questions as follows: 
 Table 7. Average Stimulation

No	Question	Mean	Items				
1	5	2.47	Useful				
2	6	2.37	Engrossing				
3	7	2.39	Interesting				
4	18	2.45	Motivate				

Based on Table 7 items the highest average value of stimulation aspect is Motivate at 2.45 and the lowest average value is Engrossing at 2.37

In	the	UEQ	questionnaire,	in	the aspect	of
novelty	assess	ment the	ere are 4 items of	ques	tions as follo	ws:
		Тя	hle 8 Average n	ovelt	v	

Table 6. Average noverly						
No	Question	Mean	Items			
1	3	2.45	Creative			
2	10	1.93	Creative Power			
3	15	2.46	Leading			
4	26	2.40	Innovative			

Based on Table 8 items, the highest average value of *novelty* aspect is Leading at 2.46 and the lowest average value is Creative Power at 1.93

Analysis of sheet consistency is known for the assessment of the correlation between each question item in each aspect of the assessment. The UEQ defines a Cronbach alpha Standard Deviation value of more than 0.7 so the data is already quite consistent. The results can be explained as follows

 Table 9. Correlation Value of attractiveness

Attractiveness				
Question	Correlation			
1 and 12	0.34			
1 and 14	0.47			
1 and 16	0.51			
1 and 24	0.24			
1 and 25	0.30			
12 and 14	0.45			
12 and 16	0.35			
12 and 24	0.32			
12 and 25	0.46			
14 and 16	0.61			
14 and 24	0.41			
14 and 25	0.49			
16 and 24	0.51			
16 and 25	0.42			
24 and 25	0.51			
Average Alpha	0.43			

At the standard deviation value of Cronbach alpha attractiveness the JKN Mobile application is as follows:

$$\alpha_{std} = \frac{p\bar{r}}{(1+(p-1)\bar{r})} = \frac{6(0,43)}{(1+(6-1)0,43)} = 0,81$$

The standard deviation value of the Cronbach alpha attractiveness of the Mobile JKN application is 0.81 which means that the data is quites consistent.

Table 10. Correlation Value of Perspicuity

Perspicuity		
Question	Correlation	
2 and 4	0.53	
2 and 13	0.45	
2 and 21	0.27	
4 and 13	0.41	
4 and 21	0.54	

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13 and 21	0.47
Average Alpha	0.44

At the standard deviation value of Cronbach alpha perspicuity the JKN Mobile application is as follows:

$$\alpha_{std} = \frac{p\bar{r}}{(1+(p-1)\bar{r})} = \frac{4(0,44)}{(1+(4-1)0,44)} = 0.758$$

The standard deviation value of the Cronbach alpha perspicuity of the Mobile JKN application is 0.758 which means that the data is quites consistent.

<b>Table 11.</b> Correlation Value of Efficiency		
Efficiency		
Question	Correlation	
9 and 20	0.24	
9 and 22	0.30	
9 and 23	0.32	
20 and 22	0.64	
20 and 23	0.34	
22 and 23	0.50	
Average Alpha	0.39	
- standard dard	ation malan	of Com

At the standard deviation value of Cronbach alpha efficiency the JKN Mobile application is as follows:

$$\alpha_{std} = \frac{p\bar{r}}{(1+(p-1)\bar{r})} = \frac{4(0,39)}{(1+(4-1)0,39)} = 0.718$$

The standard deviation value of the Cronbach alpha efficiency of the Mobile JKN application is 0.718 which means that the data is quites consistent.

Table 12. Correlation Value of Dependability

Dependability		
Question	Correlation	
8 and 11	0.51	
8 and 17	0.27	
8 and 19	0.38	
11 and 17	0.39	
11 and 19	0.50	
17 and 19	0.54	
Average Alpha	0.43	

At the standard deviation value of Cronbach alpha dependability the JKN Mobile application is as follows:

$$\alpha_{std} = \frac{p\bar{r}}{(1+(p-1)\bar{r})} = \frac{4(0,43)}{(1+(4-1)0,43)} = 0.751$$

The standard deviation value of the Cronbach alpha dependability of the Mobile JKN application is 0.751 which means that the data is quites consistent.

Table 13. Correlation Value of Stimulation

Stimulation		
Question	Correlation	
5 and 6	0.79	
5 and 7	0.55	
5 and 18	0.59	
6 and 7	0.68	
6 and 18	0.49	
7 and 18	0.46	

Average Alpha	0.59
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At the standard deviation value of Cronbach alpha stimulation the JKN Mobile application is as follows:

$$\alpha_{\text{std}} = \frac{p\bar{r}}{(1+(p-1)\bar{r})} = \frac{4(0,59)}{(1+(4-1)0,59)} = 0.851$$

The standard deviation value of the Cronbach alpha stimulation of the Mobile JKN application is 0.851 which means that the data is quites consistent.

Table 14.	Correlation	Value	of Novelty

Novelty		
Question	Correlation	
3 and 10	0.43	
3 and 15	0.53	
3 and 26	0.43	
10 and 15	0.38	
10 and 26	0.26	
15 and 26	0.58	
Average Alpha	0.44	

At the standard deviation value of Cronbach alpha novelty the JKN Mobile application is as follows:

$$\alpha_{\text{std}} = \frac{\text{pr}}{(1+(p-1)\bar{r})} = \frac{4(0,44)}{(1+(4-1)0,44)} = 0.758$$

The standard deviation value of the Cronbach alpha novelty of the Mobile JKN application is 0.758 which means that the data is quites consistent.

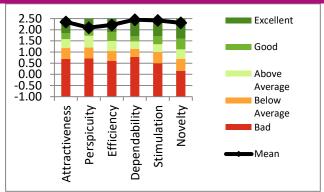
The analysis on the Benchmark sheet is the final result of the UEQ depicted in the benchmark graph which shows product quality into five categories, namely excellent, good, above average, below average, and bad. The results can be explained as follows:

Scale	Mean	Result
Attractiveness	2.35	Excellent
Perspicuity	2.09	Excellent
Efficiency	2.22	Excellent
Dependability	2.45	Excellent
Stimulation	2.42	Excellent
Novelty	2.31	Excellent

 Table 15. Benchmark Dataset Results

Based on Table 15, it can be concluded that the JKN Mobile application has no shortcomings in each group because it is already in the very good category. For the discussion of improvement recommendations, researchers only provide recommendations for improvements in the *perspicuity* aspect related to the application to make it easier to understand, simpler, and less confusing because it has the lowest average. The average value of attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty get excellent impressions International Journal of Academic and Applied Research (IJAAR) ISSN: 2643-9603





Picture 2. Benchmark Results

Based on Picture 2 above, it can be concluded that showing the average value of all question items according to the group, namely the average value of attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty gets a very good impression, the JKN Mobile application tends to have a positive impression on each scale (the whole has a value of more than the number 2) so that it can be concluded that the user is satisfied with the system that is already running.

## 5. Conclusion

Based on research on 100 people who came to the BPJS Kesehatan Surabaya Office from December 12, 2023, to December 23, 2023, it was concluded that based on the User Experience Questionnaire (UEQ) analysis, it can be concluded that the JKN Mobile application has 6 assessment aspects consisting of attractiveness, perspicuity, efficiency, dependability, novelty. stimulation. and The JKN Mobile Application as a whole has a standard deviation value of Cronbach's alpha of more than 0.7 and it can be said that the data is quite consistent and overall has a rating above 0.8 which means it has a graph located in green so that it has a positive, good, and useful application rating for users.

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