

Usability Analysis on Health Tracking Application using User Experience Questionnaire in Jakarta Area

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Abstract

The study aims to investigate user satisfaction with the Health Tracking application in Jakarta, which is a vital tool used by the government to monitor the health of Indonesians. The research will employ a User Experience Questionnaire to gather feedback from a minimum of 400 respondents who are users of the Health Tracking application selected through random sampling. The analysis of the survey results will evaluate the User Interface (UI) and User Experience (UX) of the application and provide valuable insights that can be used to enhance the app's future development. The UEQ Data Analysis Tool will be utilized to analyze data. Based on the findings, it can be concluded that users are highly satisfied with the Health Tracking application's UI/UX. However, improvements can be made to enhance the perspicuity aspect of the app, along with maintaining or improving other factors. The results of this study can serve as a benchmark for the future development of the Health Tracking application.

Keywords: mobile application, mobile health tracking application, UI/UX, user experience questionnaire

1. Introduction

The government has developed a health tracking application as part of its efforts to curb the spread of the Covid-19 virus (<https://covid19.go.id/>, 2021; Windy, 2021). The app utilizes location data and information to detect and identify people who may have been exposed to the virus. The health tracking application is expected to educate and assist the community in their efforts to stay healthy during the pandemic. It is crucial that the user experience of the application is optimized to ensure that users can easily navigate the app's features. The objective of this study is to analyze the user experience of the health tracking application, specifically in terms of the ease of use and accessibility of the app. The study will provide recommendations based on the user's experience to improve the app's overall usability.

This study will analyze the user experience of a health recording application in Indonesia. The research instrument will include questions that assess respondents' feelings towards the health tracking application based on their User Experience. The study's target population is Indonesian individuals aged 15 years and above residing in Jakarta and its surroundings. The research results will be presented as a percentage of the respondents' answers. The purpose of this study is to evaluate user satisfaction with the health tracking application using the User Experience Questionnaire (UEQ) and recommend features that can enhance the app's system and service quality to improve user satisfaction (Susilo, 2019; Japariato et al., 2007; Noverya et al., 2022). The findings of this study will benefit the Jakarta community by increasing their awareness and understanding of the Usability System for research objects using the User Experience Questionnaire in the health tracking application during the Covid-19 pandemic (Salsabila, 2021).

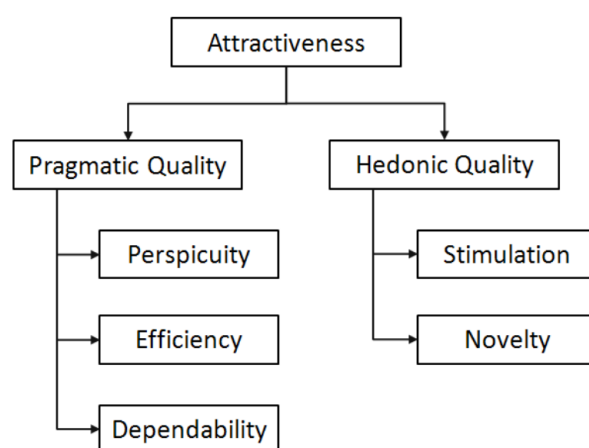


Figure 1. Scale structure of the User Experience Questionnaire (UEQ) (Schrepp, 2017).

Previous research on the health tracking application has concluded that improvements are necessary to enhance the app's effectiveness and efficiency (Hartzani, 2021). These improvements include redesigning the app's appearance to improve UI/UX aspects (Setyowati, 2019) (Setiawan, 2016), innovating new features, and promoting the app's features to increase user engagement (Maharani, 2022). These findings can serve as a reference for future related research, which can ultimately improve the system's quality and service quality to enhance user satisfaction. In conclusion, optimizing the app's features can increase its user base and promote its continued use in the future.

2. Research Method

2.1. Research Approach

This study/research used quantitative approaches. The data source of this research is the answer from the 401 respondents to the User Experience Questionnaire form.

2.2. Data Collection Method

The research process begins with identifying existing problems that can guide the researcher in determining variables. Once the variables are identified, the researcher determines the research type and methods that will serve as the basis for conducting a literature review. The literature review involves searching for related previous studies and theories relevant to the research. Following the literature review, data is collected using the User Experience Questionnaire. The collected data is then analyzed, and research results are determined based on the analysis. The researcher then evaluates the research findings, draws conclusions, and provides research suggestions.

2.3. Population and Research Sample

The sampling technique used in this study is Random sampling, which is a type of probability sampling where every individual in the target population has an equal chance of being selected. This technique ensures that the sample chosen is an unbiased representation of the entire population, as explained by (Oktriwina, 2021).

Additionally, we used the Slovin formula method to determine the sample size with a 5% margin of error:

$$n = N / 1 + Ne^2 \quad (1)$$

n = sample size

N = population size

e = desired accuracy limit value (percentage error)

$$n = 32.800.000 / 1 + 32.800.000 \cdot 0,5^2$$

$$n = 399,99$$

based on the calculation results above, it can be concluded that the minimum sample that must be taken or examined is 400 samples.

3. Results and Analysis

3.1. Questionnaire Result

The questionnaire in this study has the characteristics of respondents who are classified based on domicile, gender, and age. There are other aspects related to the research, with a total of 401 respondents.

3.2. UEQ Result Analysis

UX measurement is carried out using the UEQ, which consists of 26 questions on six UX factors such as Attractiveness, Clarity, Efficiency, Accuracy, Stimulation, and Novelty, where 401 respondents to the Health Tracking application are active users and complete Covid tests, activities, vaccinations, and check-ins /out in the application.

a. Scale Means

Table 1 shows that the mean on the Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty scale has an average value above 0.8, which can be concluded that the Vaccine List feature has a positive evaluation.

Table 1. Scale Means Vaccine Feature List

CONFIDENCE INTERVALS (P=0.05) per scale						
Scale	Mean	Std. Dev.	N	Confidence	Confidence interval	
Attractiveness	1.609	1.034	401	0.101	1.508	1.711
Perspicuity	1.653	1.111	401	0.109	1.545	1.762
Efficiency	1.582	1.120	401	0.110	1.473	1.692
Dependability	1.749	1.028	401	0.101	1.649	1.850
Stimulation	1.635	1.066	401	0.104	1.530	1.739
Novelty	1.592	1.038	401	0.102	1.491	1.694

Source: Research Result (2023)

Table 2 shows that the mean on the Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty scale has an average value above 0.8, which can be concluded that the Vaccine List feature has a positive evaluation.

Table 2. Scale Means 'COVID test results' Feature

Confidence intervals (p=0.05) per scale						
Scale	Mean	Std. Dev.	N	Confidence	Confidence interval	
Attractiveness	1.634	1.024	401	0.100	1.534	1.734
Perspicuity	1.704	1.070	401	0.105	1.600	1.809
Efficiency	1.624	1.080	401	0.106	1.518	1.730

Confidence intervals (p=0.05) per scale						
Scale	Mean	Std. Dev.	N	Confidence	Confidence interval	
Dependability	1.808	1.020	401	0.100	1.708	1.908
Stimulation	1.721	1.033	401	0.101	1.620	1.822
Novelty	1.665	1.024	401	0.100	1.564	1.765

Source: Research Result (2023)

Table 3 shows that the mean on the Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty scale has an average value above 0.8, which can be concluded that the Vaccine List feature has a positive evaluation.

Table 3. Scale Means 'Vaccine Certificate' Feature

Confidence intervals (p=0.05) per scale						
Scale	Mean	Std. Dev.	N	Confidence	Confidence interval	
Attractiveness	1.690	1.016	401	0.099	1.591	1.790
Perspicuity	1.776	1.053	401	0.103	1.673	1.879
Efficiency	1.648	1.078	401	0.105	1.542	1.753
Dependability	1.858	0.987	401	0.097	1.762	1.955
Stimulation	1.704	1.026	401	0.100	1.604	1.805
Novelty	1.628	1.015	401	0.099	1.529	1.728

Source: Research Result (2023)

Table 4 shows that the mean on the Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty scale has an average value above 0.8, which can be concluded that the Vaccine List feature has a positive evaluation.

Table 4. Scale Means Check-in/Checkout Feature

Confidence intervals (p=0.05) per scale						
Scale	Mean	Std. Dev.	N	Confidence	Confidence interval	
Attractiveness	1.612	1.065	401	0.104	1.508	1.716
Perspicuity	1.614	1.135	401	0.111	1.503	1.725
Efficiency	1.611	1.121	401	0.110	1.501	1.721
Dependability	1.781	1.065	401	0.104	1.676	1.885
Stimulation	1.650	1.059	401	0.104	1.547	1.754
Novelty	1.569	1.061	401	0.104	1.465	1.672

Source: Research Result (2023)

b. UEQ Statistic Result Analysis

Based on the UEQ statistical analysis that has been carried out, the following results can be obtained:

- 1) The Attractiveness, perspicuity, efficiency, dependability, and stimulation variables of all the features tested in this study received favorable ratings.
- 2) The Vaccine Registration feature obtained an Excellent rating on the Dependability variable, with an average rating of 1.749. The Perspicuity variable received an Above Average rating with an average rating of 1.653. The Stimulation variable received a good rating with an average rating of 1.63. The Attractiveness variable received a good rating with an average rating of 1.61. The Novelty variable received a good rating with an average rating of 1.59. Finally, the Efficiency variable received a good rating with an average rating of 1.58. The highest benchmark rating was achieved by the Dependability variable, while the lowest benchmark rating was achieved by the Perspicuity variable.
- 3) For the Vaccine Certificate feature, the Dependability variable received an average rating of 1.86 with an Excellent rating, making it the highest-rated variable. It is followed by the Perspicuity variable, which received an average rating of 1.78 and a good rating. The Stimulation variable received an average rating of 1.70, which brings an Excellent rating, and the Attractiveness variable received an average rating of 1.69 with a good rating. The Efficiency variable received an average rating of 1.65, which is still considered a good rating. Lastly, the Novelty variable received an average rating of 1.63 with a good rating. Thus, the highest benchmark rating for the Vaccine Certificate feature is the Dependability variable, while the lowest benchmark rating is the Novelty variable, which received a Good rating with an average rating of 1.63.
- 4) The Covid Test Result feature received an Excellent rating for the Dependability variable with an average rating of 1.81, followed by the Stimulation variable with an average rating of 1.72 and an Excellent rating. The Novelty variable received an Excellent rating with an average rating of 1.66. The Perspicuity variable received an Above Average rating with an

average rating of 1.70. The Attractiveness variable received a good rating with an average rating of 1.63, and the Efficiency variable received a good rating with an average rating of 1.62. The highest benchmark rating that the Covid Test Result feature received was on the Dependability variable, which received an Excellent rating, while the lowest benchmark rating was on the Attractiveness variable, which received a Good rating with an average rating of 1.63.

- 5) The Check-in/Checkout feature received an average rating of 1.78 for the Dependability variable, indicating an Excellent rating, followed by the Stimulation variable, which received an average rating of 1.65, indicating a good rating. The Attractiveness variable received an average rating of 1.61, indicating a good rating as well. For the Perspicuity variable, the feature received an average rating of 1.61, indicating an Above Average rating. The Efficiency variable received an average rating of 1.61, indicating a good rating, and the Novelty variable received an average rating of 1.57, also indicating a Good rating. The Dependability variable received the highest benchmark rating for the Check-in/Checkout feature, with an Excellent rating, and the Perspicuity variable received the lowest benchmark rating, with an Above Average rating.

c. Recommendation

Based on the results of the user experience analysis and evaluation that has been carried out by researchers using the UEQ method, the following recommendations can be given by researchers for the care-protect application:

- 1) Improve or increase efficiency in the Vaccine Certificate feature so that user and application interactions can be faster when users use the part, for example, doing the Chunking technique. Chunking is a technique that is carried out to reduce the burden of processing information by grouping content into small manageable units so that information is easier to process (Putro, 2018). This is done so that the value of the efficiency variable can increase, and the application can be even better.
- 2) To make the application easier to learn, understand, and use, improvements can be made to the Vaccine List, Covid Test Results, and Check-

in/Checkout features by enhancing clarity. One way to achieve this is by modifying the UI, such as removing unnecessary elements, which can help users focus on the relevant features. Additionally, design changes can be made to make the application more user-friendly, simple, and clear.

4. Conclusion

Based on the analysis of the UEQ questionnaire data collected from 401 respondents, the Health Tracking application features tested did not receive a mean value that falls under the Below Average assessment. Out of the four features studied, two were rated as VERY GOOD and the other two were rated as GOOD. These results suggest that overall, users are highly satisfied with the UI/UX of the Health Tracking application. However, further research is needed to identify areas for improvement, such as increasing efficiency and enhancing clarity.

Based on the research results, it is recommended that the Health Tracking application team focus on improving the efficiency aspect of the SertifikatVaksin feature to achieve an even better assessment while maintaining or improving other elements over time. Additionally, for the 'DaftarVaksin', 'HasilTesCovid', and Check-in/Checkout features, efforts should be made to improve the perspicuity aspect to enhance and maintain or improve other elements over time.

Author Contributions

Richard, Aditya Kusumadwiputra, and Adela Zahwa Firdaus Suherman proposed the research topic. Aditya Kusumadwiputra and Adela Zahwa Firdaus Suherman gather the respondent. Richard, Aditya Kusumadwiputra, and Adela Zahwa Firdaus Suherman Analyze the result and conclusion.

Conflicts of Interest

The author declares no conflict of interest.

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