

Evaluation of the Jaklitera Application's User Experience Using the User Experience Questionnaire (UEQ)

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Abstract - The Jaklitera application, developed by the Jakarta Library and the HB Jassin Literary Documentation Center, serves as an innovation aimed at expanding public access to digital literacy. This study aims to evaluate the quality of user experience of the application and analyze the influence of pragmatic quality and hedonic quality on attractiveness as a representation of overall user perception. This research adopts a quantitative approach using the User Experience Questionnaire (UEQ), which consists of six dimensions. Data were collected from 100 Jaklitera users using purposive sampling. Multiple linear regression was employed to analyze the relationships among variables. The results indicate that the Jaklitera application provides a very positive user experience. Pragmatic quality and hedonic quality significantly influence attractiveness, accounting for 86.3% of the variance, while the remaining 13.7% is influenced by other factors. These findings highlight that both functional and enjoyable user experiences play a crucial role in increasing application attractiveness.

Keywords: User Experience, Jaklitera, UEQ Method

INTRODUCTION

Advancements in the digital domain have transformed the way individuals and institutions access and utilize information. This transformation encourages information service providers, including libraries, to adopt digital technologies in order to expand service accessibility to the public. One of these implementations is the Jaklitera application, developed by the Jakarta Provincial Library and Archives Office as an integrated digital library platform based on the concepts of Library 4.0 and a borderless library. Through this application, users can access library collections flexibly without limitations of space and time.

As of April 2025, the Jaklitera application has been used by more than 583,791 users and continues to show a consistent growth trend. However, an increase in the number of users does not automatically reflect the quality of user experience. In the context of digital services, the success of an application is not only measured by its adoption rate but also by how effectively, efficiently, and pleasantly it serves its users.

Source: <https://dispusip.jakarta.go.id/>

Figure 1. Registered Users of the Jaklitera Application (2022–2025)

Previous studies have utilized the User Experience Questionnaire (UEQ) method to evaluate user experience across various digital applications. However, research that specifically examines user experience in digital library applications—particularly Jaklitera—remains

limited. Moreover, most prior studies focus on descriptive measurements of user experience without analyzing the relationships among UEQ dimensions that influence overall user perception.

Therefore, there is still a research gap in understanding how the dimensions of pragmatic quality and hedonic quality contribute to attractiveness as a representation of the overall evaluation of user experience.

This study offers novelty by not only evaluating the six dimensions of user experience using the UEQ method but also analyzing the influence of pragmatic quality and hedonic quality on attractiveness through a multiple linear regression approach. This approach provides a deeper understanding of the key factors that shape the attractiveness of a digital library application.

Based on the above explanation, this study aims to evaluate the quality of user experience of the Jaklitera application and to analyze the factors that influence its attractiveness. The research questions are as follows:

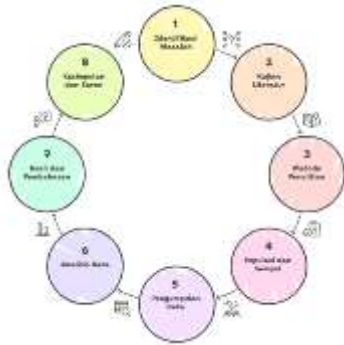
1. How is the quality of user experience of the Jaklitera application based on the User Experience Questionnaire (UEQ) method?
2. How do pragmatic quality and hedonic quality influence the attractiveness of the Jaklitera application?

What recommendations can be proposed to improve the quality of user experience of the Jaklitera application?



RESEARCH METHOD

The stages of this research are outlined as follows:



Source: (Research, 2025)
 Figure 2. Research Stages Flow

The following are the research steps undertaken by the authors:

1. Problem Identification

This study begins with the observation that the Jaklitera application has been used by hundreds of thousands of users since its launch. However, to date, there has been no data or research that specifically evaluates the overall quality of user experience using the User Experience Questionnaire (UEQ) approach. This condition results in a lack of clear understanding regarding user perceptions of each dimension within the UEQ scale. Furthermore, there are no evaluation-based recommendations that can be used as a reference for improving the user experience quality of the Jaklitera application in a measurable manner.

2. Literature Review

The literature review was conducted to collect and examine information from various relevant sources, such as e-books, scientific journals, and digital references, in order to strengthen the theoretical foundation. This process aims to obtain a comprehensive understanding of the User Experience Questionnaire (UEQ) method, user experience theory, and previous research findings that support the implementation and direction of this study.

3. Population and Sample

Population is defined as all elements—whether events, objects, or individuals—that share similar characteristics and serve as the primary focus of a study (Paramita et al., 2021). In this research, the population consists of all users of the Jaklitera application who have used the application for at least one month. A sample is a representative subset of the population that reflects its main characteristics. When the population scope is too large and research resources are limited, sampling becomes a practical approach to obtain generalizable data (Sugiyono, 2024).

This study applies a purposive sampling technique, in which samples are selected based on specific criteria

(Paramita et al., 2021).

The sample size was determined using the Lemeshow formula, which is applied when the population size is unknown (Rosyida & Priantilianingtiasari, 2023):

$$N = \frac{Z^2 p (1-p)}{d} \dots \dots \dots (1)$$

Where:
 Z=1.96 (95% confidence level)
 p=0.5 (estimated proportion)
 d=0.1 (margin of error)

The calculation result is:

$$N = \frac{(1,96)^2 \cdot 0,5 (1-0,5)}{0,1^2} \dots \dots \dots (2)$$

$$N = \frac{3,8416 \cdot 0,5 \cdot 0,5}{0,1^2}$$

$$N = \frac{0,9604}{0,1^2}$$

$$N = 96,04 = 100$$

The value obtained from the Lemeshow formula calculation is N = 96.04. This value was rounded up to 100 respondents, as the sample size must be expressed as a whole number. This rounding is considered appropriate because the resulting sample size remains representative for the purposes of this study, given the assumption of maximum proportion (p=0.5) and a margin of error of 10%. Furthermore, according to Ushakov & Ushakov (2022), rounding up in large sample selection is recommended as it helps maintain estimation accuracy and prevents a reduction in statistical test power.

3. Data Collection

This study employed a questionnaire as the primary data collection method. The questionnaire consisted of written questions distributed directly to respondents. During the data collection process, the researcher administered the questionnaire to respondents, who then completed it. The collected responses were treated as primary data and subsequently tested for validity. To measure respondents' perceptions, a Semantic Differential Scale was used as the evaluation instrument.

According to Laugwitz et al. (2008), the UEQ questionnaire is designed to capture users' intuitive perceptions of various aspects of application user experience (Giyai et al., 2024).

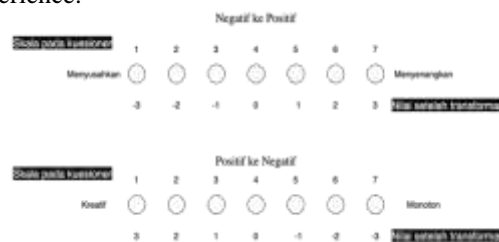
Table 1. UEQ Questionnaire

No.	Item Code	Word Pair	Semantic Differential scale
1	ATT1	Annoying – Enjoyable	-3 -2 -1 0 +1 +2 +3
2	PER1	Not understandable – Understandable	-3 -2 -1 0 +1 +2 +3
3	NOV1	Creative – Monotonous	-3 -2 -1 0 +1 +2 +3
4	PER2	Easy to learn – Difficult to learn	-3 -2 -1 0 +1 +2 +3
5	STI1	Useful – Less useful	-3 -2 -1 0 +1 +2 +3
6	STI2	Boring – Exciting	-3 -2 -1 0 +1 +2 +3
7	STI3	Uninteresting – Interesting	-3 -2 -1 0 +1 +2 +3
8	DEP1	Unpredictable – Predictable	-3 -2 -1 0 +1 +2 +3
9	EFF1	Fast – Slow	-3 -2 -1 0 +1 +2 +3
10	NOV2	Inventive – Conventional	-3 -2 -1 0 +1 +2 +3
11	DEP2	Obstructive – Supportive	-3 -2 -1 0 +1 +2 +3
12	ATT2	Good – Bad	-3 -2 -1 0 +1 +2 +3
13	PER3	Complicated – Simple	-3 -2 -1 0 +1 +2 +3
14	ATT3	Unpleasant – Pleasant	-3 -2 -1 0 +1 +2 +3
15	NOV3	Usual – Leading-edge	-3 -2 -1 0 +1 +2 +3
16	ATT4	Uncomfortable – Comfortable	-3 -2 -1 0 +1 +2 +3
17	DEP3	Secure – Not secure	-3 -2 -1 0 +1 +2 +3
18	STI4	Motivating – Not motivating	-3 -2 -1 0 +1 +2 +3
19	DEP4	Meets expectations –	-3 -2 -1 0 +1 +2 +3

		Does not meet expectations	
20	EFF2	Inefficient – Efficient	-3 -2 -1 0 +1 +2 +3
21	PER4	Clear – Confusing	-3 -2 -1 0 +1 +2 +3
22	EFF3	Impractical – Practical	-3 -2 -1 0 +1 +2 +3
23	EFF4	Organized – Cluttered	-3 -2 -1 0 +1 +2 +3
24	ATT5	Attractive – Unattractive	-3 -2 -1 0 +1 +2 +3
25	ATT6	User-friendly – Not user-friendly	-3 -2 -1 0 +1 +2 +3
26	NOV4	Conservative – Innovative	-3 -2 -1 0 +1 +2 +3

Source: (Research, 2025)

User experience in this study was assessed using a questionnaire comprising pairs of bipolar attributes. Each attribute pair was evaluated through a semantic differential scale, which represents a continuum of perception ranging from positive to negative poles and vice versa. This approach allows respondents to express their subjective perceptions of each statement intuitively, thereby enabling a more robust and comprehensive psychometric evaluation of the user experience.



Resource: (Schrepp, 2023)

Figure 4. UEQ Scale

4. Data Analysis

This phase describes the analytical procedures employed in this study. Data analysis was performed through validity and reliability testing to ensure the accuracy and internal consistency of the collected questionnaire data. Furthermore, the adequacy of the data was assessed using UEQ benchmark analysis, complemented by mean value analysis across each UEQ dimension to evaluate the overall quality of user experience more systematically.

RESULTS AND DISCUSSION

This study focuses on visitors of the Jakarta Library and the HB Jassin Literary Documentation Center who use the Jaklitera application. User

experience was measured using the User Experience Questionnaire (UEQ), which consists of 26 items and covers six main dimensions: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty. The research data were obtained from 100 respondents, with a sampling period of six days, from June 13 to June 19, 2025.

1. Validity and Reliability Testing

Validity testing aims to evaluate the extent to which the items in the research instrument accurately measure the intended constructs. This process was conducted using the Pearson Product Moment correlation approach. The results of the validity test in this study are presented below.

Table 2. Validity Test Results

item	r count	r table	remarks
P01	.586**	.195	Valid
P12	.887**		Valid
P14	.600**		Valid
P16	.561**		Valid
P24	.844**		Valid
P25	.890**		Valid
P02	.654**		Valid
P04	.847**		Valid
P13	.573**		Valid
P21	.833**		Valid
P09	.815**		Valid
P20	.660**		Valid
P22	.570**		Valid
P23	.807**		Valid
P08	.650**		Valid
P11	.619**		Valid
P17	.844**		Valid
P19	.889**		Valid
P05	.837**		Valid
P06	.609**		Valid
P07	.602**		Valid
P18	.843**		Valid
P03	.822**		Valid
P10	.791**		Valid
P15	.514**		Valid
P26	.574**		Valid

Source : (Research, 2025)

The results of the validity test across the six UEQ dimensions (attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty) indicate that all items are valid, as the calculated r-values exceed the critical r-value (0.195) with 100 respondents at a 5% significance level. therefore, the questionnaire instrument is considered appropriate for measuring user experience.

Reliability testing was conducted to determine the degree of consistency of the responses collected from the distributed questionnaire in assessing the indicators representing each variable or construct.

The results of the reliability test in this study are presented below:

Table 3. Reliability Test Results

Reliability Statistics

Cronbach's Alpha	N of Items
.951	26

Source: (Research, 2025)

It is known that the number of items tested (N of Items) is 26. The obtained Cronbach's Alpha value is 0.951, which exceeds the acceptable threshold of 0.70. Therefore, it can be concluded that all 26 items are reliable and demonstrate a high level of internal consistency.

2. Classical Assumption Testing

a. Normality Test

Prior to conducting regression analysis, a normality test was performed as part of the classical assumption testing. This test aims to determine whether the data are normally distributed using the Kolmogorov-Smirnov test. The data are considered normally distributed if the significance value is greater than 0.05, whereas a value less than 0.05 indicates that the data are not normally distributed. The results of the normality test in this study are presented below:

Table 4. Normality Test Results

Unstandardized Residual	
N	100
Asymp. Sig. (2-tailed)	.200

Source: (Research, 2025)

Based on the results of the Kolmogorov-Smirnov normality test, the obtained Asymp. Sig. (2-tailed) value is 0.200, which is greater than the significance level of 0.05. This finding indicates that the data in this study are normally distributed.

b. Heteroscedasticity Test

The heteroscedasticity test was conducted by examining the scatterplot between the predicted values (ZPRED) and the residuals (SRESID) to detect any heterogeneity of variance.

Resource: IBM SPSS 27

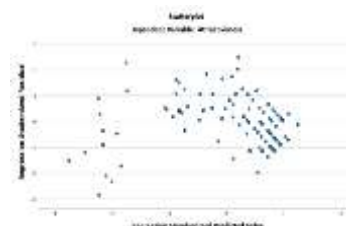


Figure 3. Heteroscedasticity Test Results

The results of the heteroscedasticity test based on the scatterplot indicate that the data points are randomly distributed and do not form a specific pattern. This suggests that the regression model does not exhibit heteroscedasticity, and therefore, the assumption of homoscedasticity is satisfied.

c. Multicollinearity Test

The multicollinearity test was conducted to detect the presence of linear relationships among independent variables in the regression model. This test was evaluated using tolerance values and the

Variance Inflation Factor (VIF). A regression model is considered free from multicollinearity if the tolerance value is greater than 0.10 and the VIF is less than or equal to 10. The results of the test are presented as follows:

Table 5. Multicollinearity Test Results

Coefficients ^a		
Model	Colinearity Tolerance	Statistics VIF
1	(Constant)	
	Pragmatic Quality	.205 4.884
	Hedonic Quality	.205 4.884

Source: (Research, 2025)

The results of the multicollinearity test show a tolerance value of 0.205 and a VIF value of 4.884 for the variables pragmatic quality and hedonic quality. Since the tolerance value is greater than 0.10 and the VIF is less than 10, it can be concluded that there is no indication of multicollinearity, and therefore, the regression model is considered appropriate for further analysis.

3. Descriptive Statistical Analysis of UEQ

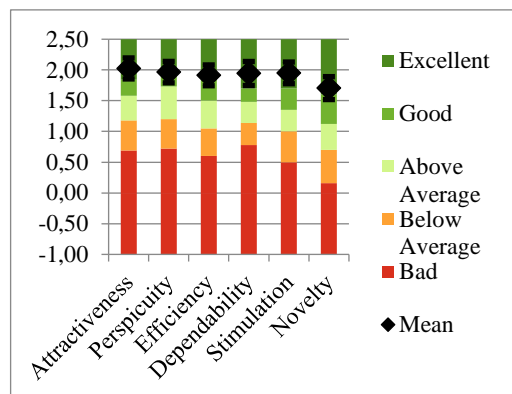
The descriptive statistical analysis in this study utilizes the mean value to evaluate each indicator, allowing for the identification of general trends in participants' responses. The results are presented as follows:

Table 6. Mean Values of UEQ Dimensions

UEQ Scales (Mean and Variance)		
Attractiveness	↑ 2,025	0,76
Perspiciuity	↑ 1,965	0,79
Efficiency	↑ 1,913	0,75
Dependability	↑ 1,943	1,00
Stimulation	↑ 1,953	0,81
Novelty	↑ 1,705	0,91

Source: (Research, 2025)

Following the descriptive analysis, this study calculated the mean values of the six main UEQ dimensions, namely attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty. The benchmark results are presented in both tables and diagrams to facilitate interpretation, enable comparisons across dimensions, and evaluate the findings against established standards. These findings illustrate the relative position of the Jaklitera application compared to other digital products and serve as an objective basis for formulating strategies to enhance the quality of user experience..



Source: (Research, 2025)

Figure 9. UEQ Benchmark Comparison Values

The comparison of values with benchmark data aims to evaluate the relative quality of the Jaklitera application within the context of established standards. Through these results, the position of the application can be identified in comparison with other previously evaluated digital products, thereby providing a more objective basis for assessing its strengths and weaknesses.

4. Multiple Linear Regression Analysis

In the application of multiple linear regression, the analysis was conducted to examine the relationship between one or more independent variables and the dependent variable that serves as the focus of this study. The results of the multiple linear regression analysis are presented as follows:

Table 7. Multiple Linear Regression Test Results

Coefficients		
Model		Unstandardized B
1	(Constant)	1.168
	Pragmatic Quality	.372
	Hedonic Quality	.158

Source: (Research, 2025)

Based on the regression results, the following equation was obtained: $Y = 1.168 + 0.372X_1 + 0.158X_2$, where $Y = attractiveness$, $X_1 = pragmatic\ quality$, dan $X_2 = hedonic\ quality$. The interpretation of the regression model is as follows:

- The constant value of 1.168 indicates that when pragmatic quality (X_1) and hedonic quality (X_2) are equal to zero, the attractiveness value is 1.168.
- The regression coefficient of X_1 (0.372) implies that every one-unit increase in pragmatic quality will increase attractiveness by 0.372, assuming other variables remain constant.
- The regression coefficient of X_2 (0.158) indicates that every one-unit increase in hedonic quality will increase attractiveness by 0.158, assuming other variables remain constant..

5. Hypothesis Testing

a. F-Test (Simultaneous)

The simultaneous F-test was conducted to

evaluate whether the independent variables jointly have a significant effect on the dependent variable, as well as to assess the overall feasibility of the regression model. The results of the test are presented as follows:

Table 8. F-Test Results

ANOVA ^a			
Model		F	Sig.
1	Regression	306.394	.000
	Residual		
	Total		

Source: (Research, 2025)

The results of the F-test indicate a significance value of $0.000 < 0.05$ and an F-value of $306.394 > F$ -table value of 3.09. Therefore, it can be concluded that pragmatic quality and hedonic quality simultaneously have a significant effect on the attractiveness variable.

b. T-Test (Partial)

The partial t-test was conducted to evaluate the individual significance of each independent variable on the dependent variable within the regression model. The results are presented as follows::

Table 9. Partial T-Test Results

Coefficients			
Model		t	Sig.
1	(Constant)	2.409	.018
	Pragmatic Quality	8.871	.000
	Hedonic Quality	2.546	.012

Source: (Research, 2025)

Based on the results of the partial t-test, the pragmatic quality variable (X1) demonstrated a significant effect on attractiveness (Y), with a significance value of $0.000 < 0.05$ and a calculated t-value of $8.871 > t$ -table 1.984. A similar outcome was observed for the hedonic quality variable (X2), which yielded a significance value of $0.012 < 0.05$ and a calculated t-value of $2.546 > t$ -table 1.984. Thus, both independent variables individually contribute significantly to the enhancement of the attractiveness variable within the application.

c. Coefficient of Determination

The coefficient of determination (R^2) reflects the proportion of variance in the dependent variable that can be explained by the independent variables, where a value approaching 1 indicates a higher capacity of the model to explain the data. The results are presented as follows:

Table 10. Coefficient of Determination Results

Model	R Square	Adjusted R Square
1	.863	.861

Source: (Research, 2025)

Furthermore, the coefficient of determination (R^2) value of 0.863 indicates that 86.3% of the variance in the attractiveness variable can be explained by pragmatic quality and hedonic quality. Meanwhile, the remaining 13.7% is influenced by other factors outside the scope of this research model.

CONCLUSION

The evaluation results utilizing the User Experience Questionnaire (UEQ) method demonstrate that the Jaklitera application delivers an excellent user experience. The attractiveness aspect achieved the highest mean score (2.025), followed by perspicuity (1.965), stimulation (1.953), dependability (1.943), and efficiency (1.913). Conversely, the novelty aspect recorded the lowest mean score (1.705). These findings indicate that, overall, the Jaklitera application successfully provides a positive user experience, particularly regarding appeal, ease of use, and convenience. Nevertheless, the novelty aspect requires further improvement, specifically concerning feature innovation and interface design, to ensure the application feels more modern and engaging.

The multiple linear regression analysis reveals that pragmatic quality and hedonic quality exert a positive and significant effect on attractiveness. Partially, pragmatic quality demonstrates a more dominant influence than hedonic quality. Simultaneously, both variables also significantly affect attractiveness, yielding a coefficient of determination (R^2) of 0.863. This indicates that 86.3% of the variance in attractiveness can be explained by pragmatic quality and hedonic quality, while the remaining 13.7% is attributed to other factors not included in this research model.

A practical implication of this study is the necessity for Jaklitera application developers to maintain pragmatic quality—such as ease of use, efficiency, and navigational clarity—as these aspects have proven to be the most influential on the application's attractiveness. Furthermore, future development should focus on enhancing hedonic quality, particularly the novelty aspect, through feature innovation, interface design revitalization, and the provision of a more interactive and engaging user experience.

This study acknowledges certain limitations, primarily its reliance on only two independent variables—pragmatic quality and hedonic quality—to explain attractiveness. Therefore, it is recommended that future studies incorporate additional variables that may potentially influence the user experience, such as service quality, user satisfaction, loyalty, or the rate of technology adoption. Moreover, subsequent research could involve a broader demographic scope of respondents or employ alternative UX evaluation methods to yield more comprehensive results."

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