

User Experience Analysis of Adobe Lightroom Application for Photographers Using the Heart Framework Method

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Abstract

Adobe Lightroom is a very popular software among photographers for editing and organizing photos. Although the application is feature-rich and intuitive, many users still face various problems using it. Common issues include slow performance on older hardware, synchronization difficulties between devices, a complex interface, and feature limitations. These issues can interfere with user productivity and satisfaction, especially for photographers who depend on this application for their work. In addition, the Adobe Lightroom subscription fee is also a barrier for photographers. This research aims to analyze the user experience of Adobe Lightroom using the HEART Framework method, which was developed by Google to evaluate the quality of user experience (UX) based on five dimensions namely Happiness, Engagement, Adoption, Retention, and Task Success. Research instrument testing uses validity and reliability test calculations which state that each statement item for user-centered metrics has been said to be valid and reliable. The achievement of the level of usability of the user experience of the Adobe Lightroom application has met and exceeded the predetermined goals in the goals-signal-metrics with a variable value of Happiness of 84.2%, Engagement of 79.3%, Adoption of 62.8%, Retention of 79%, and Task Success of 83.5%. This result shows that the Adobe Lightroom application has created a positive experience for its users, but further development is still needed to provide a more optimal user experience in the future.

Keywords: Adobe Lightroom; User experience; Heart Framework

1 Introduction

The development of science and technology (IPTEK) is currently accelerating because human thinking is increasingly advanced, this is shown by the advancement of computer science and graphic design (Setiyanto et al., 2023). Other advancements can be seen in the development of technology that offers many conveniences, one of which is in the field of graphic design, namely photography. Nowadays, photography seems to be the latest knowledge and trend for all levels of society, along with the affordable price of photography equipment and support (Cantona & Lydia, 2020). From simple photography with digital cameras to professional photography using advanced technology that requires special skills from its users (Satri, 2019).

In the world of photography, of course, it is necessary to understand how to manipulate and improve the quality of photos using tools in order to produce better images (Andira et al., 2023). Adobe Lightroom is often used as an additional complement in the field of photography (Supriyadi, 2019). Where this is for photographers and other creative art workers make one of the most frequently used software by photographers today is Adobe Lightroom (David & Yulianto, 2022).

Adobe Lightroom is software that focuses on providing convenience in editing the color range and tone of photos based on the user's mood (Suwarno, 2022). Adobe Lightroom itself has the advantage of various features and a user interface that is easy for users to understand based on 71



respondents (87.7%) so that users feel satisfied with its use (Emberton & Simons, 2022). In addition to more specific photo editing and organization, Adobe Lightroom also uses tools that can be said to be complete and non-destructive, so that the edits made do not change the original image (Fajar, 2019). Adobe Lightroom, a versatile application accessible on both mobile and desktop platforms, is currently considered the most powerful and widely used tool among photographers and photo editors (Winsley & Deli, 2024).

KSF Landscape is a Landscape Photography Art Community established on June 25, 2016, initiated by Febrianto "Erick" Saragih. To date, it has approximately 258 active members spread across various regions in Indonesia and abroad. The purpose of establishing this community is to introduce the beauty of nature and architecture, especially Indonesia through photography. Also as a forum for landscape photographer lovers to exchange knowledge and experience. The KSF community cannot be separated from the use of editing applications. While in the interviews conducted, many photographers use the Adobe Lightroom application to support their work.

From the interviews that have been conducted, it was found that Adobe Lightroom application often faces a number of problems that affect the user experience of photographers. One common problem is slow performance. This is especially true on older or less powerful hardware, causing the preview rendering, saving, and editing processes to be very slow, especially when working with large photo files such as RAW files. This slow performance results in the time taken to complete an editing task being longer, hindering the productivity of the photographer as synchronization capabilities are also common. Photographers who use Lightroom on multiple devices may experience difficulties with inaccurate synchronization. As a result, changes made on one device are not always immediately visible on another, leading to data discrepancies and potential loss of work done.

Secondly, the ease-of-use constraint of the interface on the Adobe Lightroom app is also often an issue. A complex interface can be difficult for users or those who are not used to understanding the workflow and features

available. This can hinder efficiency and cause frustration in finding and using the necessary editing tools. Feature limitation is another issue that Adobe Lightroom users experience. While the app offers a wide array of powerful editing features, some photographers may feel there are limitations in terms of certain controls or flexibility in the editing process. This may result in users feeling limited in producing a final result that matches the photographer's creative vision.

Thirdly, it can be an additional burden for photographers who have to manage storage space and ensure adequate backups are available. Then, subscription fees become a serious issue for some photographers. Adobe Lightroom is often included in Adobe Creative Cloud subscription plans that offer a wide range of creative applications. However, these subscription fees can be a significant financial burden, especially for photographers who are just starting out or have a limited budget, limiting their access to software that is essential to their work. Mengingat tantangan yang dihadapi fotografer dengan Adobe Lightroom, penelitian ini mengadopsi metode HEART Framework—alat evaluasi UX yang dikembangkan oleh Google. Heart Framework digunakan untuk menilai kualitas Pengalaman Pengguna (UX), dengan fokus pada mengidentifikasi dan meningkatkan metrik keberhasilan yang berpusat pada pengguna. (Zarkasi dkk., 2022). Metode ini berfokus pada lima dimensi utama yaitu Happiness, Engagement, Adoption, Retention, dan Task Success (Subiksa et al., 2023). Dengan menggunakan metode Heart Framework, Anda dapat mengukur kualitas aplikasi Adobe Lightroom dan memberikan masukan serta wawasan baru untuk pengembangan dan kualitas User Experience (UX) yang lebih optimal untuk aplikasi tersebut kedepannya.

Some similar previous studies such as research conducted by M. Bagas Adil Putrajaya et al. The results of this study used a descriptive method to estimate the events that occurred during the study, by distributing questionnaires through Google Form. The results of this study indicate that the GOJEK application has succeeded in providing a good experience for its users (Putrajaya et al., 2022). And there are also other studies conducted by Salma Luthfiyah Yulvi et al. Based on the results of the analysis using the



second method, namely important performance analysis, it is known that there are two variables that require further feature development, namely Happiness and Engagement. Indicators that need further attention by TikTok Shop are simplicity and intensity. The TikTok Shop development team needs to pay attention to the statement items in quadrant II because they need to be maintained considering they have a good level of importance and performance (Yulvi & Mery, 2023). Based on the explanation that has been conveyed previously, the author will conduct research with the title "User Experience Analysis of Adobe Lightroom Applications for Photographers Using the Heart Framework method".

2 Landasan teori

User Experience is an important aspect in the interaction between humans and computers. The term describes the feelings and perceptions that users experience after they interact with a product. Ensuring a product provides a positive user experience is important for assessing how effective and efficient it is for the end user (Khoiriyah et al., 2023). User Experience measurement aims to understand how effective and satisfying a product or service is for its users (Adhitya et al., 2024).

In 2010, a research paper by the team of Kerry Rodden, Hilary Hutchinson, and Xin Fu. They introduced the now popular Heart Framework for evaluating the user experience of a product. HEART is a UX (User Experience) quality measurement that consists of five main categories namely Happiness, Engagement,

Adoption, Retention, and Task Success (Pratama et al., 2019). The HEART Framework is used to evaluate user experience in an information system, the focus is on how users feel when using the system (Tri Utami et al., 2021).

The user-centered metrics used in the HEART Framework are described as follows

- Happiness (satisfaction) is a subjective dimension where the user's experience in using a product or application, such as the level of satisfaction, visual appeal, ease of use, and the tendency to recommend to others (Mayang et al., 2023).
- Engagement describes the extent to which users are involved with a product, which often includes the frequency, intensity, or depth of interaction over a period of time while using the product. (Real et al., 2022).
- Adoption is a metric that tracks the number of new users who adopt a product within a certain period of time (Sari et al., 2024).
- Retention refers to a metric that reflects the level of user engagement over a period of time, taking into account activities such as registration, feature usage, and meeting other predefined prerequisites (Dandi & Lintang, 2024).
- Task Success describes metrics with efficiency, effectiveness, and error rates when completing tasks, which are measured in percentages after the task is completed or when errors occur in the process (Salim & Thedy, 2022).

The Heart Framework is shown in Table 1.

Table Goals-Signal-Metric 1

	Sasaran	Signal	Metrics
HEART	The first step is to start by identifying the purpose of the product or feature, especially in terms of user experience	Furthermore, by thinking about how to assess the success and failure of the goal, it can be compared with the user's behavior towards the product.	Finally, think about how these signals can be interpreted into metrics, so that they can be read and visualized by stakeholders.

3 Research Methodology

3.1 Research Stages

The research method is a scientific activity carried out in stages, where the stages start from research planning to the process of documenting the research results. The steps or flow in this research are as follows:

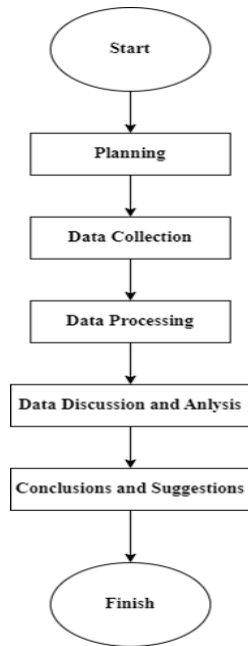


Figure 1 Research Methodology

The following is a complete explanation of the steps taken based on Figure 1 above.

3.2 Planning Stage

At this stage, the focus was on identifying problems that photographers often encounter when using the Adobe Lightroom application. After problem identification, a thorough review of existing literature was conducted to inform and support the research. Next, the scope of the problem to be investigated is determined, along with the specific data requirements that are essential for the research.

3.3 Pengumpulan data

After the planning stage, the research proceeded to the data collection stage. At this stage, both primary and secondary data were collected. Various techniques were used to acquire this data, ensuring a comprehensive collection process. By conducting face-to-face interviews with several photographers by asking several questions directly. Furthermore, the research involved direct observation of the research subjects. Data collection was done through structured questionnaires administered to the respondents. Based on these observations, the research sample was determined using the Slovin formula by applying an error margin of 0.05. The equation used to calculate the sample uses the Slovin equation which can be seen below.

N: Sample population size.

n : Number of samples sought.

e : Desired critical value (limit of accuracy) (percentage of inaccuracy due to sampling error).

e = 0,05.

$$n = \frac{258}{1 + (258 \times 0.05)^2} n = 72$$

In this study, the research sample used Simple Random Sampling, namely 72 members of the Landscape Photography Art Community. The sampling technique is carried out randomly, regardless of the level of population members (Syaifullah & Dicky, 2016). The research questionnaire distributed contained 14 statement items that used variables from the HATI Method (Happiness, Engagement, Adaptation, Retention, Task Success).

Table 2 Heart Framework statements

Item	Statement
H1	I am satisfied with the ease of use of the Adobe Lightroom interface
H2	I am satisfied with the quality of photo editing results produced by Adobe Lightroom
H3	I am satisfied with the features provided by Adobe Lightroom for managing and editing photos
E1	I often use Adobe Lightroom in editing photos
E2	I feel focused and engaged in perfecting each photo edit when using Adobe Lightroom.
E3	I feel encouraged to continue developing my photography skills through the use of Adobe Lightroom
A1	I recommend Adobe Lightroom to fellow photographers
A2	I use the advanced features in Adobe Lightroom, such as the technology for automatic editing
R1	I feel the quality of Adobe Lightroom photo edits is good
R2	I plan to continue using Adobe Lightroom in the future
R3	I feel Adobe Lightroom allows me to better maintain and organize my photo collection
T1	I successfully achieved my photo editing goals using Adobe Lightroom
T2	I find that Adobe Lightroom helps achieve the desired end result quickly and efficiently
T3	I find it easy to understand and use certain features in Adobe Lightroom

3.4 Processing Data

In the data management stage, the method used was statistical analysis using the SPSS application. This process involves validity and reliability testing before the data from the questionnaire is processed. The use of this application is important to identify the correctness of the answers to the questionnaires that have been distributed so as to obtain an accurate presentation of each answer.

3.5 Discussion and Data Analysis

This stage of the process carried out is the measurement of user adaptation to Adobe Lightroom. After conducting validity and reliability tests, then process the data obtained from distributing questionnaires to respondents. This research uses variables from the Heart Framework Method (Happiness, Engagement, Adaptation, Retention, Task Success) to determine user experience.

4 Results and Analysis

In this study, data was collected to evaluate the user experience level of Adobe Lightroom users using the Heart Framework. The questionnaire was distributed to 72 members of the Landscape Photography Art Community who actively use the Adobe Lightroom application.

4.1 Characteristics of Respondents Based on Domicile Using Adobe Lightroom.

The distribution of respondents based on the domicile of Adobe Lightroom users is depicted in the figure below:

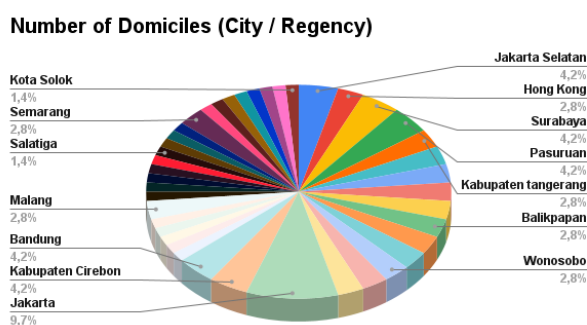


Figure 2 Characteristics of Respondents Based on Domicile Using Adobe Lightroom.

Displaying the domicile of Adobe Lightroom application users, Jakarta as the largest domicile area, the second domicile area, South Jakarta, Surabaya, Pasuruan, Bandung and Cirebon. The third domicile area is Hong Kong, Tangerang, Balikpapan, Wonosobo. The fourth domicile area, Solok City and Salatiga.

4.1 Characteristics of Respondents Based on Gender.

Number of Genders

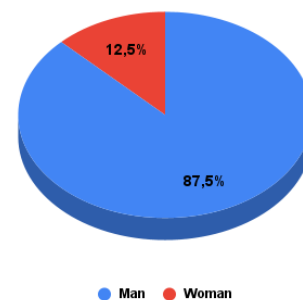


Figure 3 Respondent Characteristics Gender

It can be seen that the majority of respondents are male, namely 87.5% or 63 people and the number of female respondents is 9 people or 12.5% of the total 72 people. In this study, the number of Adobe Lightroom application users was more men than women.

4.2 Characteristics of Respondents by Age.

Number of Ages

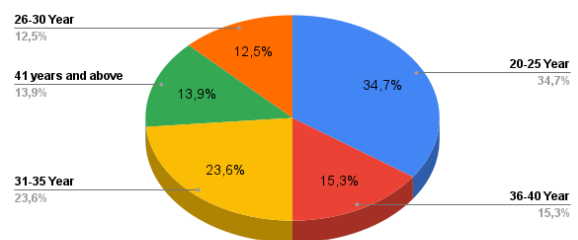


Figure 3 Characteristics of Respondents by Age.

It is evident that 25 respondents, constituting 34.7% of the sample, were between 20 and 25 years old. Respondents aged 36 to 40 years old numbered 11 people or 15.3%, while those aged 31 to 35 years old numbered 17

respondents or equivalent to 23.6%. There were 10 respondents aged 41 and above, which constituted 13.9% of the sample, and 9 respondents aged 26 to 30, which accounted for 12.5%. These findings indicate that Adobe Lightroom is predominantly used by individuals aged 20 to 25.

4.3 Validity Test and Reliability Test

In the validity test, the research questionnaire is declared valid if the Relation person value is greater than the R-Table value. In this study, determining the R-Table value means that the item is declared valid. The validity test results can be seen in Table 3.

Table 3 Validity Test

Item	r- count	r- table	Description
H1	0,805	0,228	Valid
H2	0,838	0,228	Valid
H3	0,856	0,228	Valid
E1	0,876	0,228	Valid
E2	0,772	0,228	Valid
E3	0,826	0,228	Valid
A1	0,889	0,228	Valid
A2	0,965	0,228	Valid
R1	0,841	0,228	Valid
R2	0,854	0,228	Valid
R3	0,890	0,228	Valid
T1	0,819	0,228	Valid
T2	0,812	0,228	Valid
T3	0,723	0,228	Valid

The validity test results show that all statement items from respondents are valid. This is evidenced by the correlation value (r count) greater than the r table value of 0.228.

At the reliability testing stage, 14 statements were assessed with data collected from 72 respondents. The Cronbach's Alpha standard at this stage was set at 0.60; statements were considered reliable if the Cronbach's Alpha value exceeded this threshold. The calculated Cronbach's Alpha value for the 14 statements is 0.891, which indicates that all statements are reliable as the Cronbach's Alpha value exceeds 0.60. This can be seen from the reliability calculation results in Table 4.

Table 4 Reliability Test

Item	Alpha if item deleted	Cronbach Alfa	Description
H1	0,876	0,60	Reliabel
H2	0,874	0,60	Reliabel
H3	0,876	0,60	Reliabel
E1	0,871	0,60	Reliabel
E2	0,871	0,60	Reliabel
E3	0,876	0,60	Reliabel
A1	0,886	0,60	Reliabel
A2	0,903	0,60	Reliabel
R1	0,872	0,60	Reliabel
R2	0,878	0,60	Reliabel
R3	0,869	0,60	Reliabel
T1	0,869	0,60	Reliabel
T2	0,879	0,60	Reliabel
T3	0,879	0,60	Reliabel
Cronbach Alfa	0,885	0,60	Reliabel

4.2 Data Processing

In the process of analyzing the results of questionnaires that have been filled out by respondents, there are several stages that are carried out to calculate and criticize the results (Syaifullah & Dicky, 2016).

- a. Determining the Maximum Value of Each Criterion: The first step is to calculate the maximum value (max value) for each criterion. This max value reflects the developer's expected level of satisfaction with the system being assessed. This value is calculated by determining the number of samples, the expected value, and the number of questions related to the criteria.
- b. Calculating the Total Score of Each Criterion: The second step is to calculate the total score of each criterion. This total score is the sum of all values given by respondents to each question in the questionnaire.
- c. Criteria Evaluation through Percentage Achievement: The third step is to evaluate the criteria by calculating the percentage of achievement. This assessment is carried out by dividing the total score obtained by the maximum score, then multiplying by 100% to get the percentage of achievement.
- d. Calculating the Average of all variables assessed: The fourth step is to calculate the



average of all variables that have been assessed. This provides an overview of the system's performance based on the responses from the questionnaire. ie. Determining the Usability Level The last step is to determine the level of usefulness. This level of usefulness is calculated after the entire questionnaire has been analyzed, taking into account the maximum and total scores obtained. This gives an indication of how well the system meets user expectations.

Tabel 5 Level of Usability

<i>Correlation Coefficient</i>	<i>Reliability Criteria</i>
0,81 < r < 1,00	Very high
0,61 < r < 0,80	High
0,41 < r < 0,60	Natural
0,21 < r < 0,40	Low
0,00 < r < 0,20	Very low

4.4 Descriptive Analysis

The table below presents the results of descriptive analysis conducted after distributing questionnaires aimed at evaluating the user experience of the Adobe Lightroom application.

<i>Variable</i>	<i>Number of items</i>	<i>Max Value</i>	<i>Total Value</i>	<i>Criteria Value</i>	<i>Level of Usability</i>
<i>Happiness</i>	3	1080	910	84,2%	<i>Very High</i>
<i>Engagement</i>	3	1080	857	79,3%	<i>High</i>
<i>Adoption</i>	2	1080	679	62,8%	<i>High</i>
<i>Retention</i>	3	1080	854	79%	<i>High</i>
<i>Task Success</i>	3	1080	902	83,5%	<i>Very High</i>

Gambar 5 Level of Usability

By obtaining the results of the HEART Framework test in the table and graph above, satisfactory results were obtained from the total criteria value of each variable. These results are obtained from the usability level equation, namely:

- a. Happiness obtained a total score of 910 with a difference of 170 from determining the maximum score of 1080. While the results of the criteria score obtained a total of 84.2% with a very high level of usability, this shows

that the level of achievement in the happiness variable has met the achieved category.

- b. Engagement obtained a total score of 857 with a difference of 223 from determining the maximum score of 1080. While the criterion score results obtained a total of 79.3% with a high level of usability, this indicates that the level of achievement in the engagement variable has met the category achieved.
- c. Adoption obtained a total score of 679 with a difference of 401 from determining the maximum score of 1080. While the criterion score obtained a total of 62.8% with a high level of usability, this shows that the level of achievement in the adoption variable has met the category achieved.
- d. Retention obtained a total score of 854 with a difference of 226 from determining the maximum value of 1080. While the results of the criteria score obtained a total of 79% with a high level of usability, this shows that the level of achievement on the retention variable has met the category achieved.
- e. Task Success obtained a total score of 902 with a difference of 178 from determining the maximum value of 1080. While the results of the criteria score obtained a total of 83.5% with a very high level of usability, this indicates that the level of achievement in the task success variable has met the achieved category.

5 Conclusion

Based on the analysis, Adobe Lightroom users generally expressed satisfaction with the application, particularly regarding its ease of use and the quality of its editing capabilities. Nonetheless, there is still some room for improvement, especially in improving the efficiency of the app and the reliability of its synchronization features. Utilizing the Heart Framework, this study identified key dimensions that influence user experience Happiness, Engagement, Adoption, Retention and Task Success. Adobe Lightroom excelled in user happiness and engagement during the editing process. However, the adoption and retention dimensions require further attention to ensure sustainable and optimal long-term use.

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