

Design UI/UX e-commerce photography services using the Lean User Experience Model and System Usability Scale (SUS) assessment

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Abstract

Studio Citarasa Photography (SCF) is a photography business operating for 5 years since 2017 with 87 customers. According to interviews with the studio owners, this number of consumers is minimal because the studio has not stopped promoting both inside and outside the city. This research aims to design the UI/UX e-commerce Photography Services website in the Citarasa Photography studio and implement the Lean UX Model based on simple and responsive design, understanding user wishes and needs, informative, interactive, complete, sustainable, and personalized. Research results based on the test scenario respondents/participants successfully completed all UI/UX tasks for e-commerce photography services without significant restrictions. Still, in the scenario, little information is provided about the possibility of making changes for iterations to become more responsive, in which the screen can be adjusted to an Android or tablet screen. In addition, the test results obtained using the System Usability Scale (SUS) were achieved with an average score of 89.25. It can be said that the score is in the best imaginable category with a scale of A. This means that based on usability, the data obtains an acceptable or acceptable judgment.

Keywords: Studio Photography, UI/UX Design, Lean UX Model, System Usability Scale (SUS)

1. Introduction

The development of information and communication technology systems in today's digital age has great potential to enhance the needs of various business sectors [1] [2] [3]. Creative industries, like photography, play an important role in the technical activities that shape the world of photography by using tools like cameras, lenses, tripods, lights, and more [4]. In addition, marketing activities are important in introducing goods or services directly to customers and the public. But in the modern era, creative industries use advertising methods like banners, advertising, and electronic media to display their goods and services will be easier

to promote business existence [5] [6]. Based on user experience and customer satisfaction, UI/UX design is critical to business growth [7] [8] [9].

Studio Citarasa Photography (SCF) is a photography business that has been operating for 5 years since 2017 with a total of 87 customers. This number of consumers according to interviews with the studio owners is very small because the studio does not have so many promotional activities both inside and outside the city. In addition, from interviews with consumers it was stated that it was difficult for consumers to obtain information about photographic services because Studio Citarasa Photography did not have an electronic catalogue that uses mobile or web technology.

To increase the number of consumers through promotional programmes, SCF wants electronic promotional media capable of conducting photography service transactions based on simple and responsive design, understanding user wishes and needs, informative, interactive, complete, sustainable, and personalized. In other words, SCF wants an e-commerce that can interact directly with customers online. Use e-commerce facilities for several reasons, including 1) getting access to audiences scattered around the world, 2) can communicate at a cost efficient, 3) can reach specific consumer targets, 4) easier to communicate information, such as price changes or other information; and 5) improved customer service because it's available all day [10]. For that reason, today's technology makes it possible to do various kinds of marketing with the Internet. As a result, the new business concept of Internet-based is recognized by the world. Fast transfer of data and information between individuals is one of the advantages of using internet resources to communicate with customers [11].

The Lean User Experience (UX) model will be used as a method of developing a user experience that has four (four) stages that begins with 1) Declare Assumptions, where in this phase performs identification of problems encountered by the user and then set up a list of assumptions to solve the problem. This process will be carried out in five stages, namely: a. Problem statement to define the problem that the user encounters. b. A list of assumptions to generate a problem statement assumption. c. Prioritize the assumption to prioritize the hypothesis to be developed, d. Hypotheses to produce statements that are considered valid, and e. Proto-persons to generate user models that will simplify the application design process 2) Create a Minimum Viable Product (MVP). At this stage, the interactive prototype for the application will be designed in a simple way but capable of delivering maximum results on user knowledge easily as wireframes and prototypes. 3) Run an Experiment, where in this step, the created MVP prototype is tested to see if the website has met the predefined hypothesis and to get feedback about the MVP and this stage, the system usability scale (SUS) will be used, 4) Feedback and Research are used to observe and listen to user responses to applications [12]. The purpose of the Lean UX model consists of seven principles: eliminating unnecessary things, giving quickly, not making decisions without supporting data, communicating actively, optimizing upstream and downstream, creating quality, and promoting development [13].

Some previous studies were similar and that used the Lean UX method. Based on the literature references obtained, here are some studies that are used as a reference for conducting this research. Anggara Research, Harianto and Aziz entitled Prototype User Interface Design Application Mother Siaga using Lean UX [14]. The study uses the Lean UX method to create a prototype user interface for Mother Siaga applications. It involved two tests using the Single Ease Question (SEQ) and System Usability Scale (SUS) questionnaires to determine user feedback, which helped speed up the design process and determine its usefulness. Usability tests were conducted directly on 54 respondents. The results show that the SEQ usability

questionnaire is "easy to use" and the SUS questionnaire is "acceptable". Thus, the prototype of the Ma Siaga application designed and tested by the researchers has met the purpose of this research, that is to have a good and easy-to-use user experience.

The second study that became a reference was the work of Nursyifa and Yuda Irawan entitled Application of the Lean UX Method to UI/UX Design of the Unisika Version of Windows [15]. Results from a survey of 100 IT students showed that Unsika's Digilib application was not very popular or used by students. The results showed that 63% of respondents did not know, 91% never used it, and 24% were not interested in using it. Therefore, there is a need to develop the appearance and user experience of the application to meet the needs of the user. In this study, the Lean UX method was used to design UI/UX. The results showed that the prototype had excellent usability with an average score of 87.5 on the Thinking Aloud test and an average success score of 84 and 94% on the SUS test, which showed an improvement in measuring design progress.

The last research was the research of Anshor entitled Lean UX-based Hydroponic User Interface Marketplace Analysis and Design (Studi Kasus: Petani Hidroponik di Kabupaten Banyuwangi) [16]. Results of research where to solve problems that prevent hydroponics farmers from developing their business, it is necessary to build a market user interface using a Lean UX approach. This approach consists of several steps: stating assumptions, making MVPs, running experiments, receiving feedback, and investigating. To assess the level of usability perception, prototype tests were conducted on 32 respondents. The usability test results on the design of the Hydroponic marketplace UI yielded an average of 78.9% on all variables, which indicates that the UI design that has been created is already acceptable to the user.

2. Literature Review

2.1. User Interface (UI) dan User Experience (UX)

User Interface is a part of a computer and software that enables pleasant interaction with the system and adjusts the appearance of the user interface [17]. Furthermore, User Interfaces (UI) are product displays that serve to connect users to systems where the UI can have interesting colors, shapes, and fonts on mobile and desktop applications [18].

According to ISO 9241-110:2020, a User Interface (UI) is a set of interactive system components that provide users with information and controls to perform specific tasks with an interactive system. In other words, a UI design can only be considered good if it works well. In this case, the UI design should take into account functional and appearance aspects other than appearances. Principles that a designer should understand before starting to design an UI include: a. efficiency. b. familiarity. c. flexibility. d. clarity. e. safety. f. comprehensive. g. aesthetically pleasing. h. simplicity. i. consistency. j. recovery. k. responsive[19].

User Experience (UX) according to ISO 9241-210:2019 means the perception and response of a user to a product, system, or service. UX assesses how satisfied and sensitive a user is to the product. The user experience covers not only how the component works within the product, but also how the product presents the experience to its users, such as whether the product is easy to use or not.

UI focuses on how users interact with products (applications) such as screens, buttons, icons, and other visual elements. UX concentrates on the entire interaction, including how users perceive the interaction. The main principle in UX making is that users have the authority to

determine their own levels of satisfaction. (rule of the customer). As good as the features of a product, if the user does not feel satisfaction and comfort when interacting with it, the UX level of the product will be low. UX designers must conduct user research to understand the user experience and their wishes. The study aims to improve user understanding as well as improve product functionality, features, and design. When the display created does not hinder the user in achieving its goal, the product has a good UX [20].

2.2 Lean UX

Lean UX is a modern approach to creating a user-centric user experience that focuses on reducing unimportant processes created during the development cycle while remaining focused on the level of user understanding of the product experience designed through various iterations without spending much time on documentation [12]. For UI/UX design, the Lean UX method was chosen because it combines the principles of Lean Startup, Design Thinking, and Agile. The advantage of using the Lean UX method is that the work can be maximized as it does not need to explain too much at first, and is suitable for rapid development as it involves user feedback intensively during iteration-iteration of the design, so that the design can be done faster and more effectively. For an overview of the stages of this Lean User Experience (UX) method, see Figure 1 below.

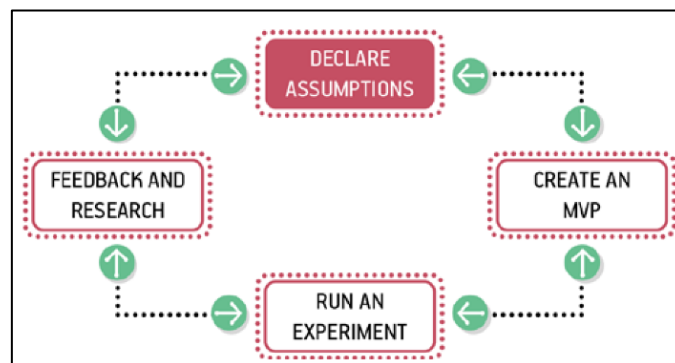


Figure 1. The stages of Lean User Experience (UX) method [12]

Based on the picture above, the stage can be described as follows.

a. *Declare Assumptions*

This phase meets the user's needs by identifying the problems that the user encounters and then compiling them into a list of assumptions to solve the problem. This phase will be carried out in five stages, namely: a. Problem statement to define the problem that the user encounters. b. A list of assumptions to generate a assumption of a problem statement. c. Prioritize the assumption to prioritize the hypothesis to be developed, d. Hypotheses to produce statements that are considered valid, and e. Proto-persons to generate user models that will facilitate the application design process.

b. *Create a Minimum Viable Product (MVP)*

At this stage, an interactive prototype for the application will be designed. This stage is simple but capable of delivering maximum outcomes about user knowledge easily. At this stage where wireframes and prototypes will be made.

c. Run an Experiment

In this step, the created MVP prototype is tested to see if the application has met the predefined hypothesis. Besides, to get feedback about the MVP.

d. Feedback and Research

By observing and listening to the user's response to the application, the phase of feedback and research will be carried out at this stage. This phase can be performed simultaneously with the Run an Experiment phase.

3. Research Method

The Lean UX model will be used in this research which is a contemporary approach to creating a user-centric user experience that focuses on reducing unimportant processes created during the development cycle while remaining focused on the level of user understanding of the product experience designed through several iterations without spending much time on documentation [21]. Here are the stages of the Lean UX model, namely:

- *Declare Assumptions*
- *Create a Minimum Viable Product (MVP)*
- *Run an Experiment*
- *Feedback and Research*

Usability testing activities will be used at this stage. There are 3 (three) aspects of the evaluation of usability testing in accordance with the principle of ISO/IEC 9126-4 namely the assessment of the effectiveness of the website/application, efficiency assessment, and user satisfaction assessment.

To measure satisfaction in the activity of obtaining feedback from users, this study will use the System Usability Scale Theory (SUS). SUS is a standardized usability test questionnaire used. Table 1 explains that SUS has ten standard questions.using a standardized System Usability Scale (SUS) (see Table 1) [22].

Table 1. List of System Usability Scale Questions.

No	Question
1	I thought I'd use this system
2	I feel this system (website) is complicated to use
3	I feel this system is easy to use.
4	I need the help of someone else or a technician in using this system
5	I feel like the features of this website are working properly.
6	I feel there's a lot of things that aren't consistent (not compatible with this system)
7	I feel like someone else will understand how to use this system (website) quickly
8	I feel this system is confusing.
9	I feel there's no obstacle in using this system.
10	I need to get used to this system first.

Table 1 shows a list of SUS questions, it can be indicated that strange-numbered questions are expected to receive the highest value on the scale (5), whereas full-number questions are anticipated to receive a lowest score on the scale (1). To this goal, the calculation is carried out according to the following rules:

- Scores for questions with odd numbers will be reduced by 1 and then multiplied by 2.5;
- The score for a question with an integer number will be reduced to 5 and then multiplied by 2.5.

The following equation 1 describes the mathematical notation of the two rules, where:

$$x = \begin{cases} (x - 1) \cdot 2,5 & \text{xi odd} \\ (5 - x) \cdot 2,5 & \text{xi even} \end{cases} \quad (2.3)$$

Description:

x : SUS scale value for each question

xi : the question i

The equation 2 gives a mathematical notation of the calculation of an average SUS score, which is calculated by dividing the number of respondents by the SUS scores.

$$\bar{x} = \frac{\sum x}{n} \quad (2.4)$$

Description:

x : Average score

$\sum x$: the number of SUS scores for each respondent

n : number of respondents

Next, the results of the calculation are divided into predicates based on the values shown in Figure 1.

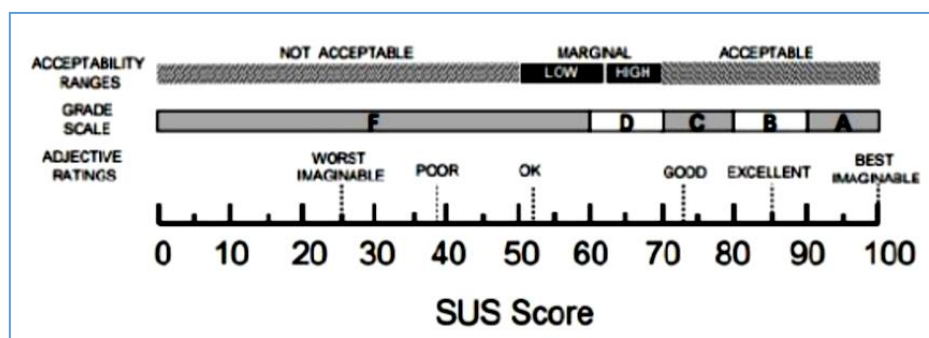


Figure 2. SUS Score

4. Result and Discussion

4.1. Declare Assumption

This phase will be carried out in five stages, namely: a. Problem statement to define the problem that the user encounters. b. A list of assumptions to generate a assumption of a problem statement. c. Prioritize the assumption to prioritize the hypothesis to be developed, d. Hypotheses to produce statements that are considered valid, and e. Proto-persons to generate

user models that will facilitate the application design process.

4.1.1 Problem Statement

A problem statement is a phase that aims to explain the problems that the user will encounter as well as the purpose of the system. This problem statement is based on discussions with stakeholders that generate the need for system development. The results of the interview yield the following points:

- The number of consumers according to the interviews with the studio owners is very small on the grounds that the studio does little promotional activities both in the city and outside the city so it requires alternative solutions such as online promotional media that are able to conduct transactions of photographic services based on a simple and responsive design, understand the wishes and needs of the user, informative, interactive, complete, continuous, and personalization.
- Interviews with consumers stated that it was difficult for consumers to obtain information about photography services because SCF were not available electronic catalogues either using mobile technology or the web.

4.1.2 Assumption Worksheet

At the assumption stage, a list of assumptions contains questions that will be made and produces assumptions from the problem statement. At this stage of assumption, will answer questions that have been obtained from the problem statement stage. The list of assumptions should consist of user and business assumption. At this stage, the solution will be found and the goal will be achieved. The results of the assumption worksheet can be seen in Table 2 and Table 3 below.

Table 2. User Assumption

Question	User Assumption
Who's using it?	The studio owner who will do the promotion and the customer who wants to see and order based on the catalogue submitted
When and how	Promotions can be viewed by customers 1x24 hours without limitation of time, customers can make booking transactions based on given offers such as pre-wedding events, wedding, thanksgiving
What features are most important	Documentation/Portfolio of events, products offered, prices and packages, online booking

Table 3. Business Assumption

Question	Business Assumption
Assumption 1	It is believed that users need the documentation/ portfolio feature of the event and the photos displayed can be enlarged. This need can be met by creating a feature that can help users view the documentation/ portfolio of events that have ever been taken from the company's activities. The risk in this feature is if the user feels lacking or does not find the documentation/ portfolio of the displayed events.
Assumption 2	Users are believed to need product features

	This need can be addressed by creating features that can help users see and find products such as pre-weeding, weeding, or tasyaquran.
	The risk in this feature is if the user finds it difficult to perform a product search
Assumption 3	Users are believed to need price and package features
	This need can be met by creating features that can help users see and find prices and packages.
	The risk in this feature is if users find it difficult to perform price and package searches
Assumption 4	Users are believed to need an online booking feature
	This need can be met by creating features that can help users make online bookings
	The risk in this feature is if users find it difficult to make online bookings
Assumption 5	Users are believed to need a personal contact feature
	This need can be met by creating a feature that can help users communicate with the studio owners.
	The risk in this feature is if the user finds it difficult to communicate with the studio owner.

4.1.3 Prioritizing Assumption

This phase aims to prioritize the assumptions that will be made into features based on the level of risk. This is done to give more attention to making assumptions that are priority. Assumptions are structured based on the risk and value that will be perceived by the user. Figure 2 shows the result of the assumption of priority.

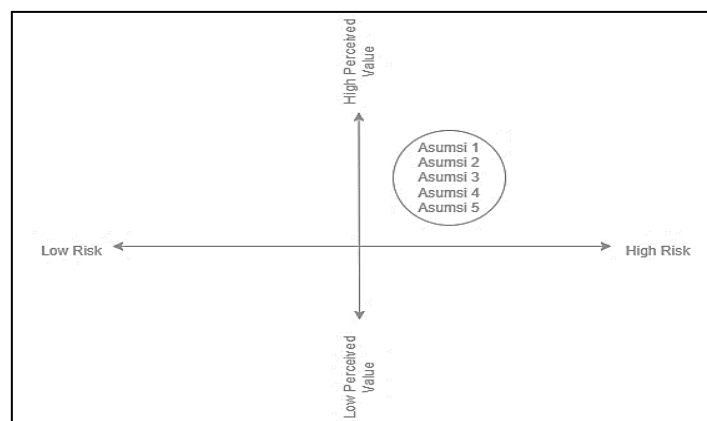


Figure 3. The result of the assumption of priority

Based on Figure 3 above stated the larger the assumption, the greater the risk and value perceived by the user. Assumption 1 is the assumption considered most important because it has the greatest risk, i.e. the user feels that the documentation or portfolio of the event displayed either on the first page or on another page of the displayed promotional media is lacking or not found, so that the value perceived by the user will increase with the presence of the promotional medium. Assumption 2 is in second order, with a slightly smaller risk than assumption 1, which means that users find it difficult to find a product. Assumption 3 is in third order because it has less risk than other assumptions, so the value that will be perceived by the user is also smaller.

Assuming 4 and 5 are in the last order, where users face difficulties when looking for prices and packages, as well as when making online transactions.

4.1.4 Hypotheses

The result of this hypothesis is as follows:

- It is believed that the documentation/portfolio feature of the event is required to help the user see the documents/portfolios of events that have been taken from the activities of the studio owners. Attractive or not is the priority of the customer's choice. Says true if the user finds the documentation/portfolio of the displayed event.
- It is believed that product features are needed to help users see and search for products such as pre-weeding, weeding, or assumptions. It's true if the user feels no difficulty doing a product search.
- It is believed that price and package features are needed to help users see and find prices and packages. It's true if the user feels no difficulty doing a price and package search.
- It is believed that the online booking feature is required so that it can help users make online bookings. It's true if users feel no more trouble making online bookings.
- It is believed that personal contact features are needed to help users communicate with the studio owners. It's true if the user feels no difficulty communicating with the owners of the photo studio.

4.1.5 Proto-Persona

Proto-persons are the process of creating user models to facilitate application design. The question of getting proto-persons is the needs and wishes of the user as well as the problems that arise when using the media to promote web-based photographic services. Figure 4 below shows the proto-persons that have been created.

 Citra and Grafi Candidate Bride Location: Palembang	Behaviours: • Hobbys ordering products or services online • Everything has to be practical and simple. • Prefer to interact with websites that are easily informative, interactive, and complete
Needs/Goals: • Want to easily view and search for documentation/ portfolio of events that have ever been taken from the activities of the photographer. • Want to see and find prices and packages offered by photography owners. • Want to easily book online and can communicate through the contact information of the person provided.	Difficulties: • Often find event offers especially ahead of the wedding with a name card • Not much and enough time to look directly to the booking location to see the catalogue as well as the documentation/ portfolio of the event of the photographic service

Figure 4. Proto-Persons

4.1. Create a Minimum Viable Product (MVP)

The design of this MVP is simple but capable of reaching the highest level of user understanding of the application so it is easy to understand. MVPs usually have prototypes as the end result. At this stage, the planning will be carried out in three (three) stages, namely:

4.2.1 Site-Map

Site-map is a hierarchical diagram of a website or application that shows how pages are prioritized, linked, and labelled. By creating a site map, people can plan the usability of the page and get a full picture of what happens on the page. Site maps are created to describe the pages and menus that will be visible on the e-commerce photography service. Figure 5 below shows the results of the site map that has been created.

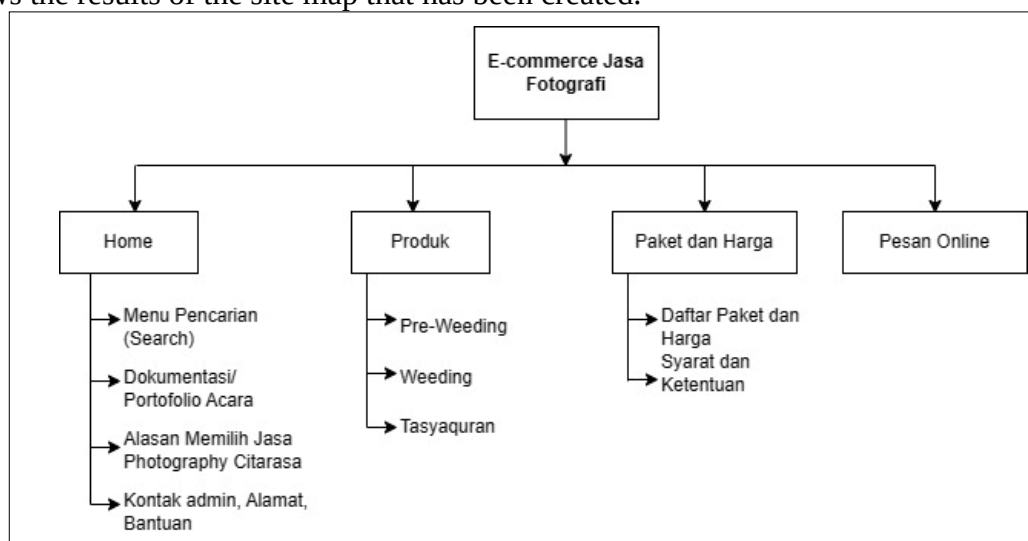


Figure 5. Site-map

4.2.2 User Flow

User flow is an overview of the process that will be performed by the user when using a product to complete a task or purpose. Before starting planning, it is important to know the user's process flow when using e-commerce photography services to complete the task or purpose. Here's the user's process when using the e-commerce photography service.

- User flow view and enlarge the documentation photo/event portfolio display on the Homepage or communicate with the photo studio owner through WhatsApp contacts. This user flow describes the process when users want to enlarge the photo documentation/ portfolio of the event and communicate with the owner of the photo studio connected to the WhatsApp app. User flow for the process can be seen in Figure 6 below.

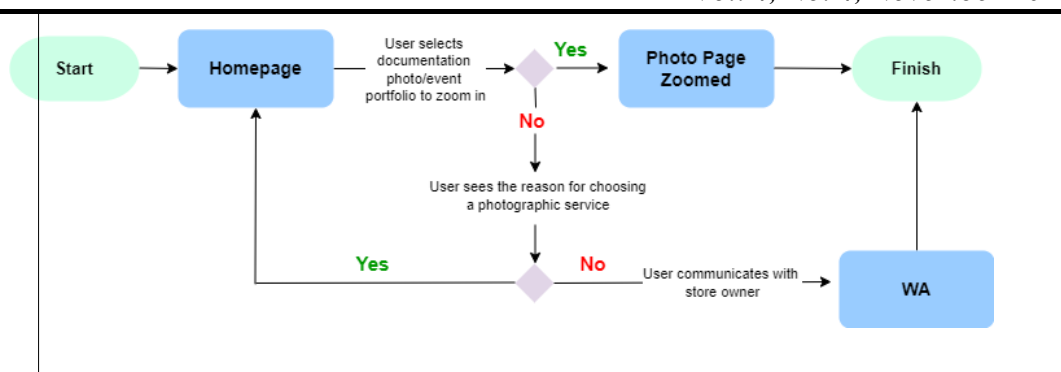


Figure 6. User Flow Homepage

- User flow viewing the Product menu

This user flow describes the process when users want to see the kinds of photographic products that have been performed by SCF. The process by which users go to the main page and then select the product menu and then display the product type. There are three types of products: pre-weeding, weeding, and tasyaquran. Click process if you select the type of pre-weeding product then will display the example photo before weeding, then if you choose the product weeding then will show the photo example weeding and last is if you press the button to show the user will show a photo example of weeding. This user flow can be seen in Figure 7 below.

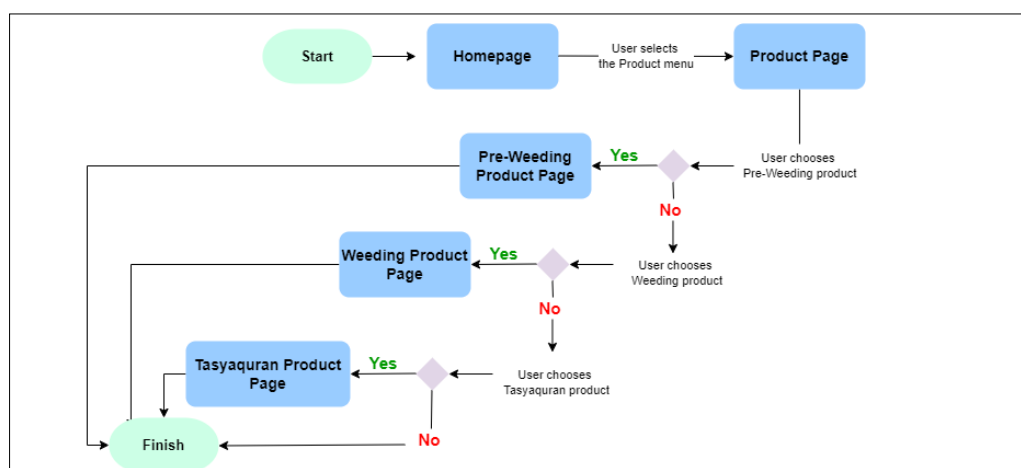


Figure 7. User Flow Viewing the Product Menu

- User flow viewing package and price menus

This user flow describes the process when the user wants to see the packages and prices offered to the user, and then the user can make a reservation by filling in the data on the available forms. Once the form is filled in and if the user presses the Send to Booking button, then the booking details page will be displayed and the user can also download the invoice in pdf format. It can also be used by the user by selecting the online message button. This user flow can be seen in Figure 8 below.

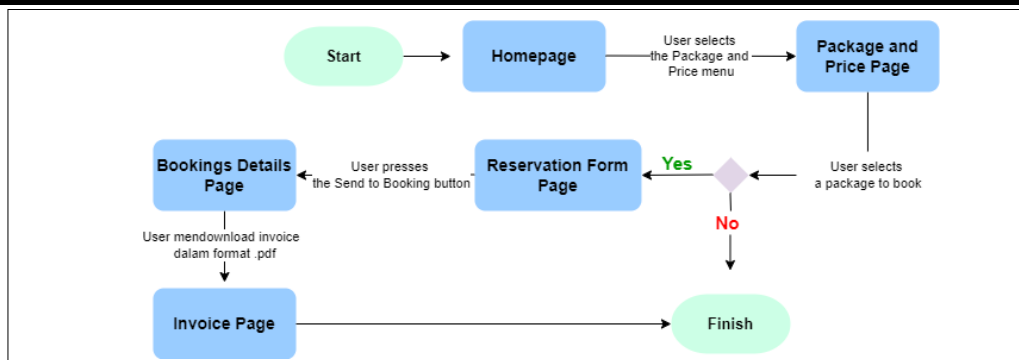


Figure 8. User flow viewing package and price menus

4.2.3 Wireframe

Initial design began with the creation of a wireframe, which was the basic framework for designing an application interface and was just a rough picture before becoming a real product. A clear overview of the page structure, estimated visual layout, and user flow is provided through the wireframe. The aim is to keep the idea focused on the user and define and describe the features that will be used by the application. This wireframe is made using a Figma prototyping tool and has a frame size of 1280 x 768, which is a standard size for a desktop screen.

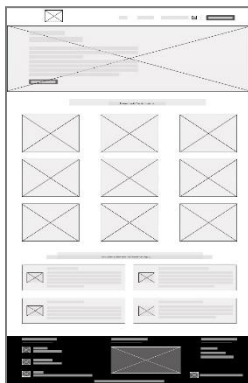


Figure 9. Homepage Wireframe

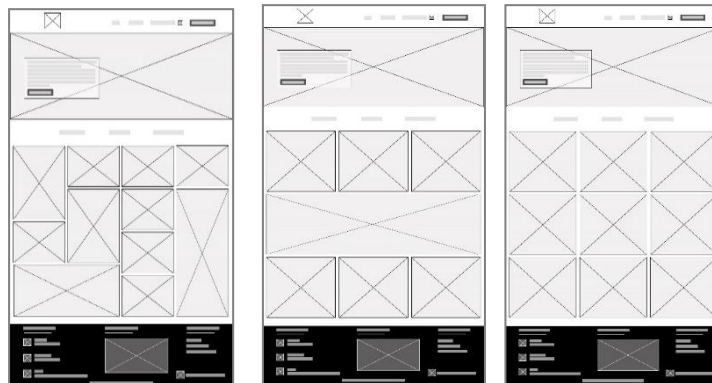


Figure 10. Product Page Wireframe.

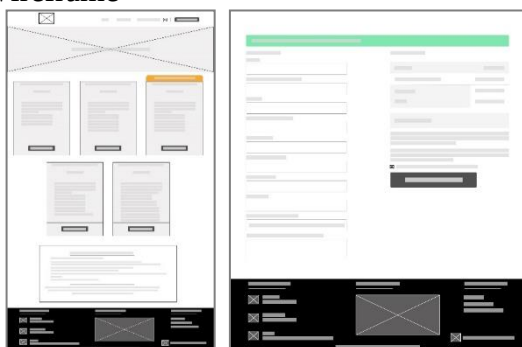


Figure 11. Package and Price Page Wireframe

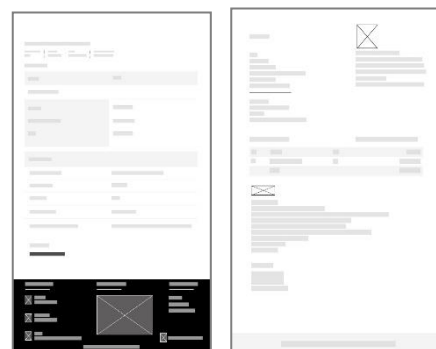


Figure 12. Invoice Page Wireframe.

4.2. Prototype

This research uses prototypes to design mobile applications before finally becoming the end product. The prototype design will be made according to the wireframe design that was made at the previous stage. The design will be done up to the level of the High-Fidelity Prototype, which has the advantage that the prototype is complete and interactive, can clearly describe the navigation scheme, and has a look similar to the final product, so users can see the actual product. The main page prototype is the main page that will be displayed when a website is opened. This prototype displays information such as documentation/portfolio of events so that users when viewing the documentation / portfolio of the event feel confident and confident. Besides that on this page is also shown the reason why should choose Taste photography services (Figure 13). A product page prototype is a page that contains a type of product resulting from a photographic service that has been performed by Citarasa. Some photos are shown in the menus like pre-wedding menus, wedding, and tasyaqrان (Figure 14). The prototype package and price page is a page that contains package lists and prices. By selecting one of these packages where the user can make a booking by pressing the message button now and being directed to the booking form and subsequently filling in the data consisting of the name of the customer, no. WA, email, event location address, event date, event time, and additional notes (Figure 15).

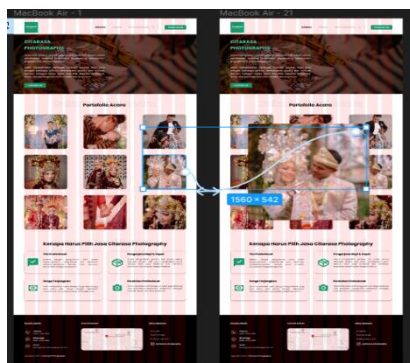


Figure 13. Homepage Prototype

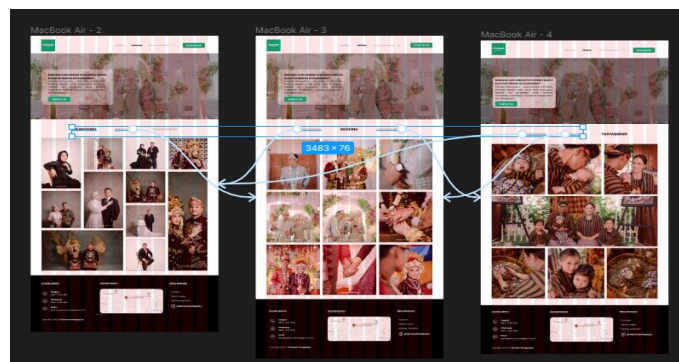


Figure 14. Product Page Prototype.

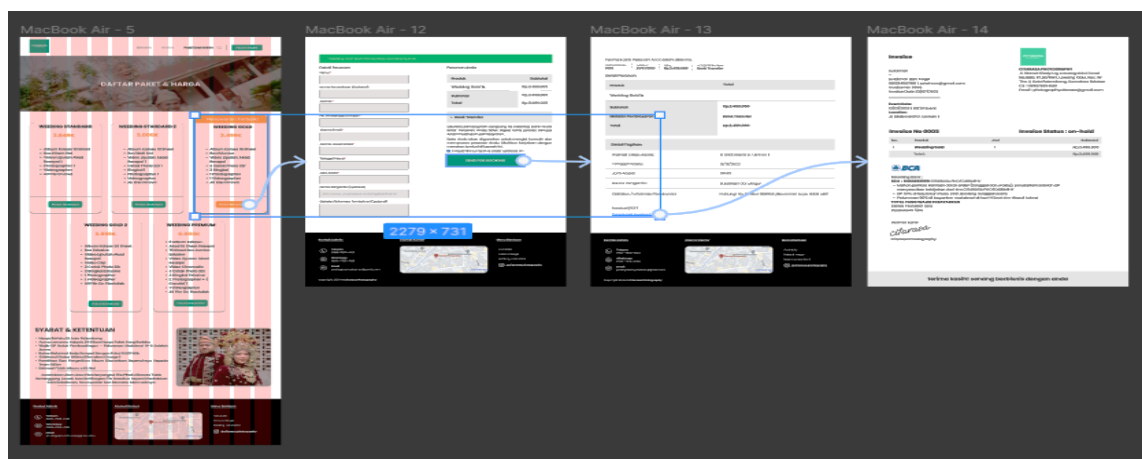


Figure 14. Package and Price Page Prototype.

4.3. Run an Experiment

Testing a prototype that has been created at the Create an MVP stage using a user scenario that has already been created is the next step. The usability test was given to photo studio owners and staff as a participation with a total of 7 respondents plus 3 customers who are undertaking photo service booking transactions. The user scenario test results are shown in Table 4 below.

Table 4. The User Scenario Test Result

Task	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
Show documentation/event portfolio	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Show Products	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Show Photo Service Packages and Prices	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Online booking (booking online)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Communicating with SCF owners	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

From Table 4 above where each respondent/participant successfully completed all tasks from UI/UX to e-commerce photographic services. All participants have the ability to complete these tasks without significant impediments, but in such scenarios there is little information provided about the possibility of making changes to the iteration. These iteration changes will be described in the Feedback and Research section. For testing using SUS based on the questions listed in Table 1 so the data of the test results can be seen in Table 5 and Table 6 below

Table 5. The results questioner of the SUS Question (Original Score)

Responden	Questions (Original Score)									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
R1	5	1	5	1	4	2	5	1	4	1
R2	5	2	4	1	5	1	5	1	5	3
R3	4	1	5	2	5	2	4	2	4	2
R4	5	2	5	1	5	2	5	1	5	1
R5	5	1	5	2	4	1	5	1	4	3
R6	4	1	5	1	5	1	4	2	4	2
R7	4	2	4	2	5	1	5	1	4	1
R8	4	2	4	2	5	2	4	1	5	1
R9	5	1	5	1	4	1	5	1	5	1
R10	5	1	4	2	4	1	4	1	4	1

Score data in Table 5 is the result of data collection through standardized questionnaires using SUS which will then be calculated with existing SUS scores calculation rules. The calculation is done according to the following rules:

- Scores for questions with odd numbers will be reduced by 1 and then multiplied by 2.5;
- The score for a question with an integer number will be reduced to 5 and then multiplied by 2.5.

Table 6. The results of the SUS Score

Responden	Questions										Total	Score Total x 2.5
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
R1	4	4	4	4	3	3	4	4	3	4	37	92,50
R2	4	3	3	4	4	4	4	4	4	2	36	90,00
R3	3	4	4	3	4	3	3	3	3	3	33	82,50
R4	4	3	4	4	4	3	4	4	4	4	38	95,00
R5	4	4	4	3	3	4	4	4	3	2	35	87,50
R6	3	4	4	4	4	4	3	3	3	3	35	87,50
R7	3	3	3	3	4	4	4	4	3	4	35	87,50
R8	3	3	3	3	4	3	3	4	4	4	34	85,00
R9	4	4	4	4	3	4	4	4	4	4	39	97,50
R10	4	4	3	3	3	4	3	4	3	4	35	87,50
Average Score												89,25

From Table 6 above that the final score averages at 89.25. It can be said that the score is in the category best imaginable with grade scale A. This means that the usability based on the data obtains a judgment that is acceptable or acceptable.

4.4. Feedback and Research

For the validation of the MVP prototype, the Feedback and Research phase is carried out to see and hear feedback given by participants on the UI/UX e-commerce photographic service design in Cigarasa Photography during testing in the Run an Experiment phase. The feedback obtained will be useful for making corrections if there are suggestions or feedback. The results of the test will be used to validate hypotheses that have been made at the stage of the hypothesis statement. Participants were not only asked to fill in a SUS questionnaire, but they were also asked to give criticism and advice. During the test, the author also looked at how the participants used the UI/UX e-commerce photography service scheme by looking at the recapitulation results recorded at the time the questionnaire was asked. From the feedback gathering, some points were obtained from the participants as follows:

- From the UI/UX design that has been made it needs to be improved to be more responsive where the appearance can be adapted to existing screens such as the display for android or tablet.
- Photos contained in the documentation or otherwise should be fixed using the zoom-in or zoom out view.

From the feedback results, changes have been made by listening to the needs of the user, so the initial step of the change is to make improvements so that the design can appear more responsive and the second to display the photo to appear larger with the concept of zoom-in and zoom-out.

5. Conclusion

Some of the following conclusions have been made based on the phases of research that have been carried out as a result of the application of Lean UX methods in e-commerce UI/UX design for photographic services in Studio Citarasa Photography (SCF). As to the conclusion can be explained as follows.

1. The research has successfully designed a prototype e-commerce application for web-based photography services that allows users to make transactions with photographic services or view documentation photos as an online catalogue that can be viewed in 24 x 24 hours with an easy-to-use and responsive design.
2. This research uses the Lean UX method in the design of UI/UX e-commerce photographic services. It greatly helps authors in identifying problems that users face so that they can focus on what features should be made and how users understand the product experience designed.
3. Based on the scenario testing of respondents/participants successfully completed all tasks of UI/UX for e-commerce photographic services. All participants have the ability to complete these tasks without significant constraints, but in the scenario there is little information given about the possibility of making changes to the iteration to be more responsive where the appearance can be adapted to existing screens such as the display for android or tablet.
4. The test results obtained using the System Usability Scale (SUS) were achieved with an average score of 89.25. It can be said that the score is in the category BEST IMAGINABLE with grade scale A. This means that based on usability, the data obtains a judgment that is acceptable or acceptable.

The final result of the research was an interaction design design for an e-commerce photography service in the form of an interactive prototype. The suggestion for further research is to use this prototype as a benchmark in carrying out further development to the implementation stage of responsive website development by adapting all existing device sizes.

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