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UI/UX Redesign of the Alfagift Application Based on Design Thinking and Usability Evaluation Using the System Usability Scale (SUS)

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Abstract

The rapid growth of e-commerce has increased the demand for applications with high usability. This study redesigns the UI/UX of the Alfagift application using the Design Thinking approach, focusing on three transaction features: store search, order tracking, and order history. Usability was measured with an Indonesian adaptation of the ten-item System Usability Scale (SUS) administered on a five-point scale. An initial evaluation involving 60 participants produced an average SUS score of 48.88, which is below the acceptable level. Guided by the Empathize, Define, Ideate, Prototype, and Test stages, a high-fidelity Figma prototype was developed and evaluated by 30 of the initial participants who completed the retest, yielding an average SUS score of 75.17 (Good category). Because the two evaluations involved partially different respondents and a prototype rather than the live application, the 26.29-point difference is interpreted descriptively. In addition, 73.3% of respondents preferred the redesigned interface for its clearer navigation and more informative order tracking. The findings offer focused UI/UX recommendations for improving transaction transparency and user control in retail e-commerce applications.

Keywords: Alfagift, Design Thinking, System Usability Scale, UI/UX, Usability.

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1. INTRODUCTION

The development of digital technology has accelerated the progress of the e-commerce sector in Indonesia. Buying and selling activities that utilize the internet network as a transaction medium are known as e-commerce [1]. This growth can be seen from the increasing number of business actors, digital service users, and the projected value of Indonesia's e-commerce market, which is estimated to reach USD 75 billion in 2024 with a growth of around 19% [2]. Internet penetration has also increased from 64.8% (2018) to 77% (2022) and is expected to reach 79.5% by 2024 [3].

This development has also shifted consumer behavior from offline to online shopping. Factors influencing users when selecting an e-commerce platform include system usability, ease of use, and social factors [4]. Today's consumers tend to choose apps that are able to provide a fast, practical, and convenient shopping experience, especially in terms of store selection, order status transparency, and transaction history.

In the midst of the development of the digital era, the use of technology and information contributes significantly to the provision of services that are accurate, precise, organized, responsible, and have a high level of reliability [5]. Therefore, it is not enough for application development to be oriented only towards meeting functional needs, but also to pay attention to user experience (UX). User experience describes the experience that users gain while interacting with a system, which is influenced by the level of ease of use, accessibility, and efficiency in completing tasks using the application [6].

The quality of an application in the development of digital systems is greatly influenced by the application of aspects (Human-Computer Interaction/HCI), Interface design (User Interface/UI), and user experience (User Experience/UX) and usability. HCI or human-computer interaction focuses on

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how the system is designed to be used easily, effectively, and comfortably by users by paying attention to ergonomic aspects and the experience of human-computer interaction [7]. In addition, app development also puts User Interface (UI) and User Experience (UX) as the main aspect. Visual interface design is a key focus User Interface (UI) so that users can interact with the application easily and intuitively. On the other hand, User Experience (UX) Focusing on the experience gained by users while using the system. The combination of the two is an important factor in creating an effective and satisfying user experience. Good design can provide ease, comfort, and satisfaction in using apps, while poor design has the potential to cause confusion and reduce the quality of user experience. [8].

Usability describes the extent to which users can use the system effectively, efficiently, and satisfactorily in achieving a particular goal. Evaluation implementation usability aims to assess whether the system has met the standards of good interaction so that it can provide an optimal user experience [9]. These aspects are becoming increasingly important in application development e-commerce, because the quality of the user experience directly affects the level of satisfaction and success of using the application.

Alfagift as the official application Alfamart provides shopping services online that integrates with physical stores as well as customer loyalty programs [10]. However, compared to competitors like Astro, Alfagift still has some weaknesses, especially in the features tracking order, store selection, and order status transparency. This is reflected in the app's rating (Alfagift 4.3 and Astro 4.9 based on App Store ratings observed during the study, which serve only as an indicative comparison) as well as user reviews complaining about delays and unclear order status.

The main problem identified is the absence of a real-time order tracking feature in the application version observed, suboptimal store selection, and order history that has not been separated between active and completed orders. These problems have an impact on the quality of the user experience and cause difficulties in monitoring the transaction process. Level usability The application in this study was evaluated using System Usability Scale (SUS) [11]. However, to understand the causes of the problem more deeply, an approach is used Design Thinking that focuses on the empathy stage to solution testing [12]. The combination of these two methods is expected to result in a redesign of the UI/UX of the Alfagift application, especially in the order tracking features, store selection, and order history.

A previous study by Kaunang, Tulenan, and Sengkey redesigned the Alfagift application using the Design Thinking method and evaluated the result with the System Usability Scale, reporting an average score of 80.75, and that redesign already covered features such as order tracking and store contact [10]. Rather than claiming that earlier work evaluated the application only in general terms, this study continues that line of research by concentrating on three transaction-related features, namely store search, order tracking, and order history, and by comparing usability before and after the redesign. The emphasis of this study is on transaction transparency and user control, which are examined through these three features. The study was conducted online with Alfagift users in Indonesia. The resulting score is not interpreted as better or worse than that of previous work, because the participants, tasks, and testing conditions differ. The findings are expected to provide focused design recommendations for improving the user experience of retail e-commerce applications.

2. RESEARCH METHODS

The series of studies began with a quantitative evaluation of the level of usability Alfagift app using System Usability Scale (SUS). Furthermore, the findings of this stage are deepened through a qualitative approach to understand user needs and formulate solutions redesign by stages Design Thinking. The combination of these two approaches forms the mixed method used in this study. The use of SUS allows researchers to obtain data based on direct user experience resulting in an objective picture of the level of usability of the application [13].

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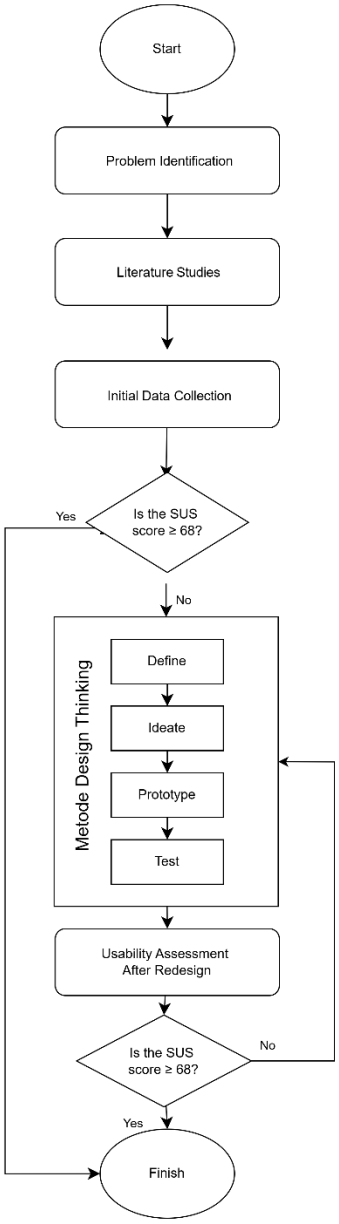


Figure 1 Research flow

2.1 Problem Identification

The research process began through problem identification activities based on the results of application feature analysis and user reviews on the App Store.

2.2 Literature Studies

The preparation of the theoretical foundation begins with a search of journals, books, and previous research that are related to the research topic. The results of the study are used as a reference in understanding the concept usability, application System Usability Scale (SUS), as well as the Design Thinking as a solution development approach.

2.3 Initial Data Collection

Initial data collection was carried out through the distribution of questionnaires System Usability Scale (SUS) Google Form based to obtain information about the level usability Alfagift application.In addition, researchers also carried out the empathize by collecting and analyzing user reviews and comments on the App Store. Data Review and application ratings are used as supporting data to strengthen the results obtained from the questionnaire distribution. The selection of respondents was carried out using inclusion criteria to ensure the suitability of characteristics with the needs of the research, namely:

1. Be between 18 and 34 years old.
2. Have been using the Alfagift application for at least 1 month.

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Respondents were selected using a non-probability purposive sampling technique in accordance with the inclusion criteria above. Participants were recruited online through the distribution of a Google Form questionnaire shared via social media and messaging groups. The age range of 18 to 34 years was chosen because this group represents the most active users of mobile e-commerce applications in Indonesia. Participation was voluntary, no personally identifying information was published, and the responses were used solely for research purposes. The study was carried out in two stages during the 2025 to 2026 research period, namely an initial evaluation and a post-redesign evaluation.

At this stage, data was obtained in the form of SUS scores, respondents' responses regarding the application user experience, and various complaints and user inputs that became the basis for identifying usability problems in the Alfagift application.

The instrument used in this study is an Indonesian adaptation of the standard ten-item System Usability Scale (SUS). The ten statements preserve the original structure of the SUS, consisting of five positively worded items (the odd-numbered items) and five negatively worded items (the even-numbered items), each rated on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The SUS score for each respondent was calculated using the standard SUS procedure: the contribution of each odd-numbered item is the response value minus one, the contribution of each even-numbered item is five minus the response value, and the sum of all contributions is multiplied by 2.5 to produce a score ranging from 0 to 100, as formulated in Equation (1). Because the item wording was translated and adapted into Indonesian, strict psychometric equivalence with the original English SUS was not separately validated, and this is noted as a limitation.

$$SUS_i = 2.5 \left[\sum_{j \in \{1,3,5,7,9\}} (x_{ij} - 1) + \sum_{j \in \{2,4,6,8,10\}} (5 - x_{ij}) \right]$$

2.4 SUS Score Evaluation

This stage is done to calculate and evaluate the score System Usability Scale (SUS) to find out the usability level of the Alfagift application. If the SUS score ≥ 68, the application is considered to have good usability so that the research can be completed. However, if the SUS score < 68, the study proceeds to the redesign Using the Design Thinking. A value of 68 is used as the standard usability limit, where the SUS score that exceeds 68 indicates that the system has a usability which is good, while a score below 68 indicates that the system still needs improvement [14].

2.5 Design Thinking Method

If the evaluation results show that the SUS score is below 68, the research will be continued using the Design Thinking method. In this study, Design Thinking chosen as an approach to develop solutions based on user needs. This approach puts the user as the main focus during the design process so that the resulting solution is more suited to the problem at hand. Process Design Thinking carried out through five stages, namely empathize, define, ideate, prototype, dan test [15].

2.5.1. Empathize

The empathize stage aims to understand the experience, needs, and problems faced by users. Information is collected through an online questionnaire as well as an analysis of Alfagift app reviews and ratings on the App Store. The results of this stage are used as a basis for identifying problems to be solved in the next stage [16].

2.5.2. Define

The define stage was carried out by analyzing the data obtained at the empathize to identify and formulate the main problems experienced by Alfagift application users. At this stage, the information that has been collected is filtered and grouped according to its level of importance so that the priority of the problem that needs to be fixed is obtained. The result of this stage is in the form of a problem formulation that becomes the basis for the development of solutions at the next stage [17].

2.5.3. Ideate

At the ideate stage, the process is focused on developing solution ideas to overcome the problems that have been formulated at the stage define. At this stage, the researcher develops various improvement ideas that will be used as the basis for prototyping [18].

2.5.4. Prototype

The prototype was developed by designing the application interface using Figma based on a predefined solution. The result of this stage is a prototype that is ready to be tested by the user [19].

2.5.5. Testing

Testing stage was conducted by testing the prototype to the respondents using an online questionnaire. At this stage, users provide assessments and input on the prototype that has been made.

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The test results are used to evaluate and ensure the resulting design meets the needs of the user [20].

2.6 Usability Evaluation After Redesign

At this stage, the prototype results redesign was retested using a SUS questionnaire to measure the increase in usability. If the SUS score ≥ 68, then redesign declared successful. However, if the SUS score < 68, the process Design Thinking can be repeated to refine the design.

3. RESULTS AND DISCUSSION

3. 1 Data Collection

Initial testing was carried out to measure the level of usability of the Alfagift application before the redesign process was carried out. The measurement used the System Usability Scale (SUS) method by involving 60 respondents who met the research criteria.

Table 1 Respondent data before the redesign

Resp	Total Score	SUS score (Total score × 2.5)
1	31	77.5
2	39	97.5
3	28	70
4	23	57.5
5	25	62.5
6	32	80
7	25	62.5
8	35	87.5
9	30	75
10	30	75
11	16	40
12	34	85
13	34	85
14	18	45
15	37	92.5
16	22	55
17	7	17.5
18	8	20
19	3	7.5
20	11	27.5
21	26	65
22	30	75
23	6	15
24	9	22.5
25	5	12.5
26	6	15
27	6	15
28	10	25
29	5	12.5
30	4	10
31	23	57.5
32	6	15
33	35	87.5
34	35	87.5
35	27	67.5
36	32	80
37	4	10
38	22	55
39	3	7.5
40	8	20
41	34	85
42	7	17.5
43	7	17.5

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Resp	Total Score	SUS score (Total score × 2.5)
44	2	5
45	7	17.5
46	4	10
47	19	47.5
48	21	52.5
49	29	72.5
50	24	60
51	37	92.5
52	31	77.5
53	6	15
54	6	15
55	4	10
56	34	85
57	28	70
58	21	52.5
59	29	72.5
60	33	82.5
	Total	2932.5

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$$\bar{x} = \frac{\sum x}{n}$$

$$\bar{x} = \frac{2932.5}{60} = 48.875$$

The average SUS score obtained was 48.875, which is below the usability standard of 68. These results show that the Alfagift application still needs improvements in terms of usability.

3.2 Design Thinking Method

3.2.1 Empathize

The empathize stage was used to explore the user experience of the Alfagift application so that the needs and problems faced can be identified in more depth. The process is carried out through online listening by analyzing user reviews, open-ended questionnaire responses, as well as the distribution of the SUS questionnaire to 60 respondents aged 18-34 years who have used the application for at least one month. The results of this stage show several main obstacles, such as mismatches in delivery estimates, limited store selection, lack of information on the tracking feature, and a less intuitive interface.

3.2.2 Define

Based on the results of the analysis, several main problems were identified in the Alfagift application, including inconsistencies in delivery estimates, limited user control over store selection, less informative order tracking, and an unstructured order history. In addition, the application interface was considered less intuitive. Overall, these issues were related to usability, lack of system transparency, and limited user control, which negatively affected the user experience and user satisfaction.

Based on the identified problems, several design solutions were selected to address the primary needs of users. The proposed solutions were determined according to the priority of the usability issues identified during the Empathize and Define stages. The mapping between user problems, design solutions, and the rationale for selecting each solution is presented in Table 2.

Table 2 Mapping User Problems and Solutions

User Problems	Design Solutions	Rationale
Users could not search for or select their preferred store.	Added a Store Search feature.	To provide greater flexibility and improve user control when selecting a store before placing an order.
Users had difficulty monitoring the delivery progress because the tracking information was unclear.	Redesigned the Order Tracking feature with real-time tracking.	To improve delivery transparency and enable users to monitor their orders in real time.
The order history was displayed in a single list, making it difficult to identify the status of each transaction.	Redesigned the Order History page by categorizing orders based on their status.	To make transaction information easier to locate and improve information organization.

3.2.3 Ideate

At the stage ideate, the researcher formulated a solution based on the results of the previous stage to improve the user experience, especially on the tracking, store selection, and order history. The resulting solutions include the development of tracking more informative and real-time, the addition of a manual store selection feature, as well as a redesign of the order history display with a separation between pending and completed orders. These ideas are then prioritized and used as the basis for designing prototypes in the next stage.

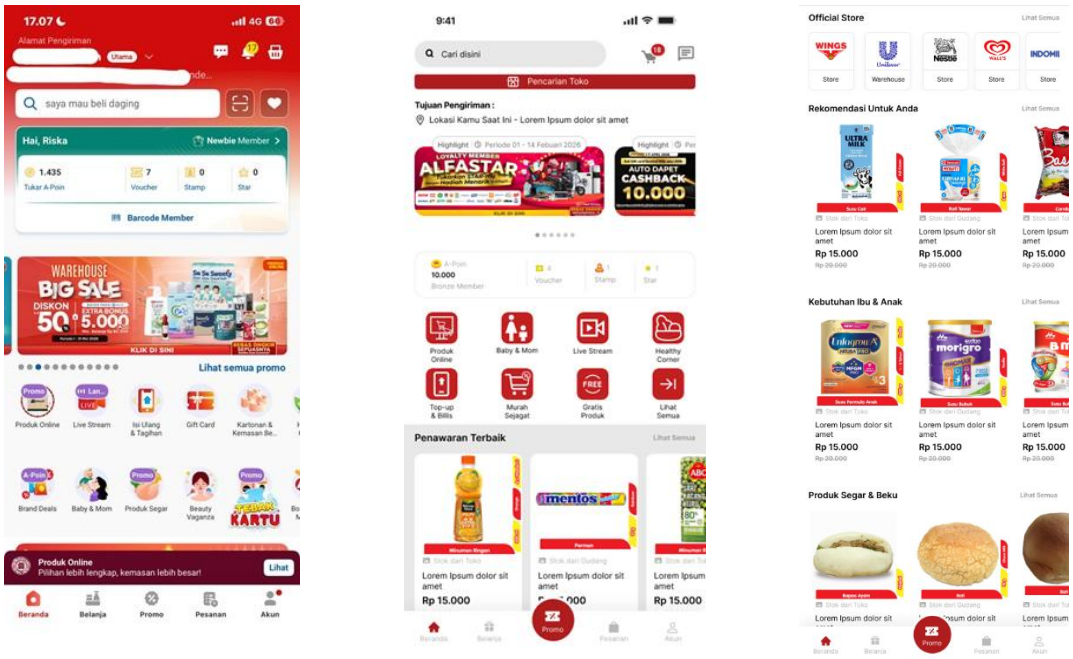
3.2.4 Prototype

After determining the design solution, a prototype was developed to represent the redesigned Alfagift user interface based on user needs. The prototype illustrates the navigation structure, interaction flow, and feature presentation derived from the Empathize and Define stages. In this study,

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only the high-fidelity prototype is presented because it represents the final design evaluated during the usability testing.

a. Home Page



(a) (b)

Figure 2 Homepage before redesign (a), Homepage after redesign (b)

The homepage was redesigned to improve visual consistency and navigation efficiency. In the original design, the menu icons used different colors, resulting in an inconsistent visual appearance that made it more difficult for users to identify the main features. In the redesigned interface, all menu icons were standardized using a consistent visual style and color scheme to create a cleaner interface and strengthen the visual hierarchy.

In addition, a Store Search feature was added to the homepage, allowing users to search for and select their preferred store directly without navigating to another page. This improvement was based on the findings from the *Empathize* and *Define* stages, which indicated that users experienced difficulties in locating and selecting stores. These design changes were intended to improve navigation efficiency, provide greater user control, and enhance the overall user experience.

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b. Nearby Store Selection

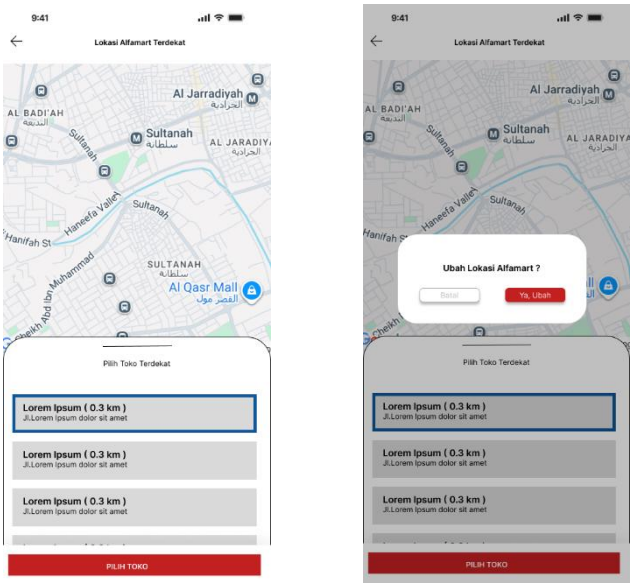
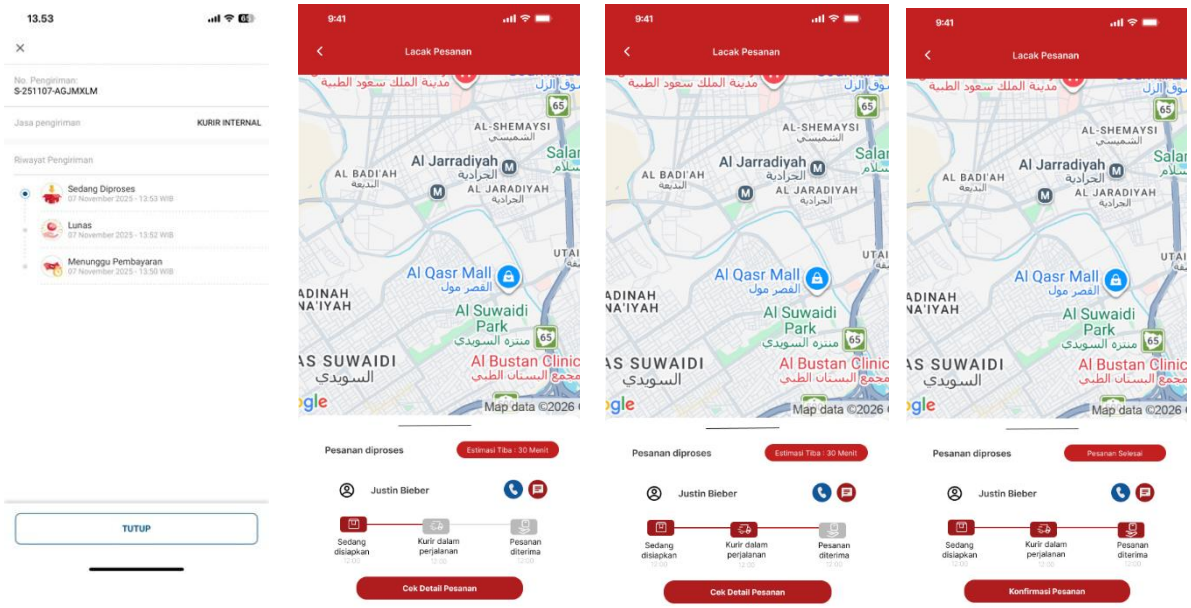


Figure 3 Redesigned store search feature

In the original design, users could not search for or select a store according to their preferences because the application automatically assigned the nearest store based on the user's location. In the redesigned interface, a *Store Search* feature was added, allowing users to search for and select their preferred store directly. This improvement was intended to provide greater flexibility and enhance user control when selecting a store before completing a transaction.

c. Order Tracking



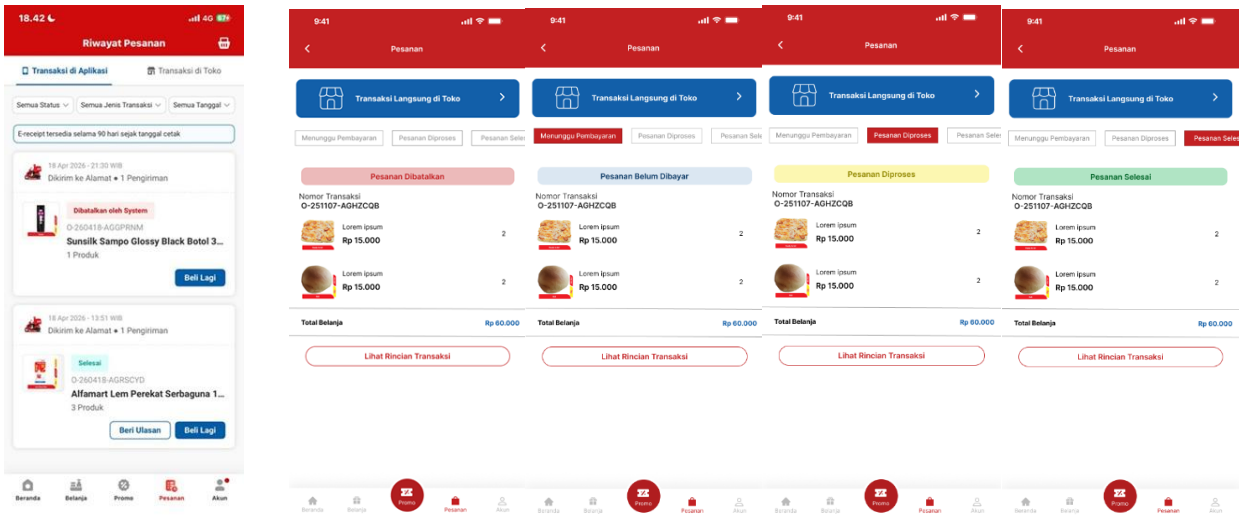
(a) (b)

Figure 4 Tracking order before redesign (a), Tracking order after redesign (b)

In the original design, order status information was displayed only as a simple status list, making it difficult for users to monitor the delivery progress in real time. In the redesigned interface, the Order Tracking feature was enhanced by adding a simulated real-time tracking display (a proposed tracking

interface), an estimated delivery time, and a clearer delivery progress indicator consisting of Order Prepared, Courier on the Way, and Order Delivered. These improvements were intended to increase delivery transparency, support clearer monitoring of the delivery process, and reduce uncertainty throughout the delivery process.

d. Order History



(a) (b)

Figure 5 Order history before redesign (a), Order history after redesign (b)

In the original design, the order history was displayed as a single list without categorizing orders based on their status, making it difficult for users to identify and monitor the progress of each transaction. In the redesigned interface, the Order History page was organized into separate categories, including Pending Payment, Order Processed, Completed, and Canceled. This improvement was intended to help users locate transaction information more easily, monitor order status efficiently, and improve the overall organization of order history.

3.2.5 Testing

The evaluation of the results of the Alfagift application redesign was carried out at the testing stage using the System Usability Scale (SUS) instrument. The data collection process was carried out through the distribution of questionnaires to 60 respondents who met the same research criteria as the previous test, but only 30 respondents completed the second questionnaire within the data collection period.Therefore, the analysis was conducted based on 30 respondents who participated in the retest.

Table 3 Respondent data after Redesign

Resp	Total Score	SUS score (Total score × 2.5)
1	36	90
2	30	75
3	32	80
4	32	80
5	30	75
6	21	52.5
7	20	50
8	34	85
9	31	77.5
10	33	82.5
11	33	82.5
12	36	90
13	36	90
14	33	82.5
15	33	82.5
16	24	60

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17	20	50
18	21	52.5
19	20	50
20	33	82.5
21	36	90
22	30	75
23	20	50
24	29	72.5
25	40	100
26	39	97.5
27	30	75
28	21	52.5
29	39	97.5
30	30	75
	TOTAL	2255.00

$$\bar{x} = \frac{2255.0}{30} = 75.17$$

The test results showed an increase in the SUS score from 48.875 to 75.1667 in the Good category. This indicates a higher average SUS score after the redesign. The difference is interpreted descriptively and is discussed further together with the characteristics of the two groups of respondents.

Descriptively, the initial evaluation (n = 60) produced a mean SUS score of 48.88 (SD = 30.09; minimum 5.0; maximum 97.5), while the post-redesign evaluation (n = 30) produced a mean SUS score of 75.17 (SD = 15.52; minimum 50.0; maximum 100.0). Only 30 of the 60 initial participants completed the second evaluation, and the responses could not be matched individually between the two stages. The comparison is therefore presented as a descriptive difference between two partially overlapping groups rather than as a paired or statistically tested change, and the possibility of attrition bias is acknowledged.

Table 4 Mean Scores and Interpretation of Each SUS Item Before and After the Redesign (Indonesian-adapted SUS; odd-numbered items are positively worded, even-numbered items are negatively worded)

Item	SUS Statement	Before Redesign (Mean)	After Redesign (Mean)	Interpretation
Q1	I think that I would like to use this system frequently.	2.93	4.10	Increased, indicating users are more willing to use the application regularly after the redesign.
Q2	I found the system unnecessarily complex.	3.18	2.00	Decreased (better), indicating the redesigned interface reduced users' perception of complexity.
Q3	I thought the features in the application were well integrated.	3.05	4.20	Increased, showing better integration of features from the users' perspective.
Q4	I found the application confusing to use.	3.02	2.13	Decreased (better), indicating clearer navigation and interaction flow.
Q5	I felt confident using the application.	3.12	4.10	Increased, reflecting improved user confidence while interacting with the redesigned interface.
Q6	I thought the application was too complicated to use.	3.15	2.13	Decreased (better), showing that the redesign simplified user interaction.
Q7	I would recommend Alfagift to others because of its ease of use.	2.93	4.23	Showed the largest increase among the ten items, indicating greater willingness to recommend the redesigned application.

Item	SUS Statement	Before Redesign (Mean)	After Redesign (Mean)	Interpretation
Q8	I needed to learn many things before I could use the application.	3.22	2.40	Decreased (better), indicating the redesigned interface was easier to learn.
Q9	I found it easy to locate the features I needed.	3.10	4.07	Increased, showing that the redesigned navigation made features easier to find.
Q10	I often felt frustrated while using the application.	3.02	1.97	Decreased (better), indicating the redesign reduced user frustration.

Based on Table 4, the largest increase occurred in Q7 (willingness to recommend apps), which increased from 2.93 to 4.23. This suggests that users considered the redesigned application more worth recommending to others; the change is reported descriptively.

In addition, all even numbered statement items, namely statements 2, 4, 6, 8, and 10, experienced a decrease in average value. Because these items are negative statements in the System Usability Scale (SUS), a decrease in scores actually indicates an increase in usability. These findings indicate that after the redesign, users rated the application to be simpler, less confusing, easier to learn, and able to reduce frustration during the user process.

The improvements in Q9 also show that users find the features they need more easily. This result is in line with design improvements in the store selection, order tracking, and order history features developed based on the results of the Empathize and Define stages in the Design Thinking method.

3.3 SUS Comparative Evaluation Results

The average SUS score was 26.29 points higher than in the initial evaluation. This difference is descriptive and should be interpreted together with the differences in participants and conditions between the two stages, rather than as evidence of a statistically significant or causal improvement.

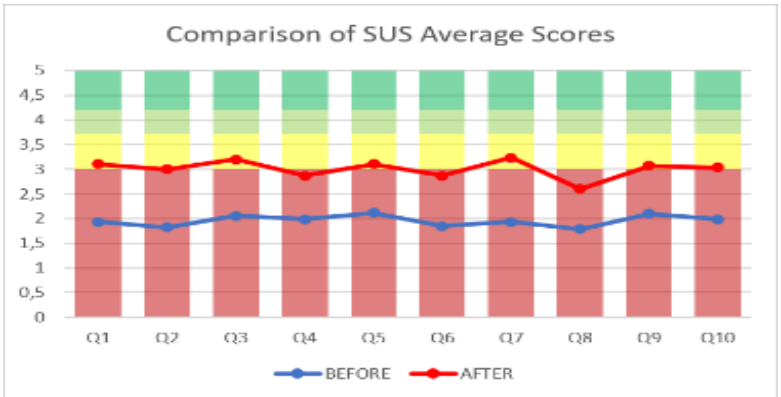


Figure 6 Comparison chart of evaluation results

Based on the average SUS score comparison chart, there was an increase in odd questions and a decrease in even questions. This shows that the system after the redesign is considered easier to use, more consistent, and more convenient by users.

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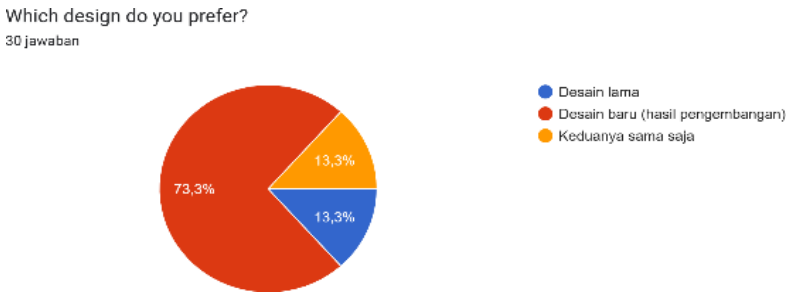


Figure 7 User Preferences for Alfagift App Design

In addition, the user preference evaluation showed that of the 30 respondents, 22 (73.3%) chose the new design, 4 (13.3%) chose the old design, and 4 (13.3%) rated both designs as equal. Respondents who chose the new design considered it more modern, with clearer navigation, a more informative tracking feature, and a more structured order history.

However, some users still chose the old design due to habituation and familiarity with the existing navigation flow. Based on these findings, it can be concluded that the redesign improved the usability and overall user experience of the Alfagift application.

Because the SUS produces a single global usability score, the improvement cannot be attributed to any individual feature. The three redesigned features, namely store search, order tracking, and order history, were changed together, so their separate contributions were not isolated in this study. Interpreting the result at the level of the overall interface therefore provides a more cautious and defensible reading of the data.

Beyond the improvement in usability scores, this study also identified that the primary usability issues in the Alfagift application were related not only to interface appearance but also to transaction transparency and user control. This pattern was reflected in users' needs for store selection, real-time order tracking, and a more structured order history. Unlike previous studies that evaluated the Alfagift application from a general usability perspective, this study provides more specific design recommendations by focusing on these three features. These findings contribute practical UI/UX design recommendations for improving user experience in retail e-commerce applications, particularly by addressing transaction transparency and user control.

However, this study has several limitations. First, the evaluation was conducted using a redesigned prototype rather than a fully implemented Alfagift application. Therefore, the findings reflect users' perceptions of the proposed interface rather than actual application usage. In addition, the post-redesign evaluation involved only 30 respondents, which may limit the generalizability of the findings. Therefore, future research is encouraged to implement the redesigned interface in a fully functional application and evaluate it with a larger and more diverse group of participants. Furthermore, future studies may incorporate additional usability evaluation methods to provide a more comprehensive understanding of the user experience.

4. CONCLUSION

The results of the System Usability Scale (SUS) measurement on the Alfagift application before the redesign obtained an average score of 48.875, indicating poor usability. The analysis revealed that users experienced several usability issues, including limited store selection, unclear order tracking, poorly structured order history, and insufficient transaction transparency.

The application of the Design Thinking approach successfully produced a UI/UX redesign that addressed these usability issues through improvements to the Store Search, Real-Time Order Tracking, and Order History features. The post-redesign SUS evaluation increased to 75.17, which falls into the Good category. Because the evaluation used a prototype and a partially different group of respondents, this result is reported as a descriptive improvement rather than a statistically tested one.

The findings also indicate that improving transaction transparency and user control through the redesigned features contributed to the enhancement of usability and user experience in the Alfagift

application. Furthermore, this study provides practical UI/UX design recommendations for retail e-commerce applications by demonstrating how user-centered design can address specific usability issues identified through Design Thinking and SUS evaluation.

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