Improving Dolan Banyumas App: A Design Thinking Approach to Enhance Tourism Services

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Abstract

The Dolan Banyumas application is a digital step to support tourism in Banyumas Regency. However, the results of observations and evaluations conducted show that the design of the user interface (UI) and user experience (UX) of this application is still less than optimal, with incomplete information, confusing navigation, and unattractive application design. This study aims to redesign the application using the Design Thinking approach, which consists of five stages: empathize, define, ideate, prototype, and test stages. Usability was assessed using the System Usability Scale (SUS) with a 10-question Likert scale survey distributed to 30 respondents. Evaluation results using the System Usability Scale (SUS) method showed an increase in the average score from 63 to 81.42, which classifies the app into the "Good" and "Acceptable" categories. Improvements include easier-to-use navigation, more complete tourist information, and the addition of new features such as ticket booking and bus tour maps. The user satisfaction rate increased from 60% to 87%, while efficiency rose by 30%. Based on Net Promoter Score (NPS), the app is categorized as "Promoter." The Design Thinking approach proved effective in improving the quality of user experience.

Keywords: Dolan Banyumas, Application Redesign, UI/UX, Design Thinking

1. INTRODUCTION

The tourism industry is an important part of Indonesia's economic growth. Tourism refers to a journey initiated by a person or group for a period of time, transitioning from one location to another [1]. Indonesia's tourism sector has great potential, but it also faces problems such as unsustainable destination management, uneven infrastructure, and increasingly fierce global competition. To remain attractive as a world tourist destination, tourism must be developed in an innovative and sustainable way. This is in line with the United Nations Sustainable Development Goals (UN SDGs). The recently established UN Sustainable Development Goals (UN SDGs), designed to eradicate poverty, safeguard the environment, and ensure prosperity for all, require innovative and solution-

focused research to provide critical insights to support the advancement of sustainable development [2].

After the pandemic in 2020, tourism visits in Indonesia rose again, this became a reference for various tourism sectors to take advantage of sustainable development goals (SDGs). Based on data from the Central Statistics Agency (BPS), in 2023 it is projected that the number of domestic tourists in Indonesia will reach 825.80 million trips. This figure is a significant increase compared to the situation in 2022. This trend shows a recovery after the Covid-19 pandemic that affected 2020 to 2022 [3], more detailed data is illustrated in Figure 1.
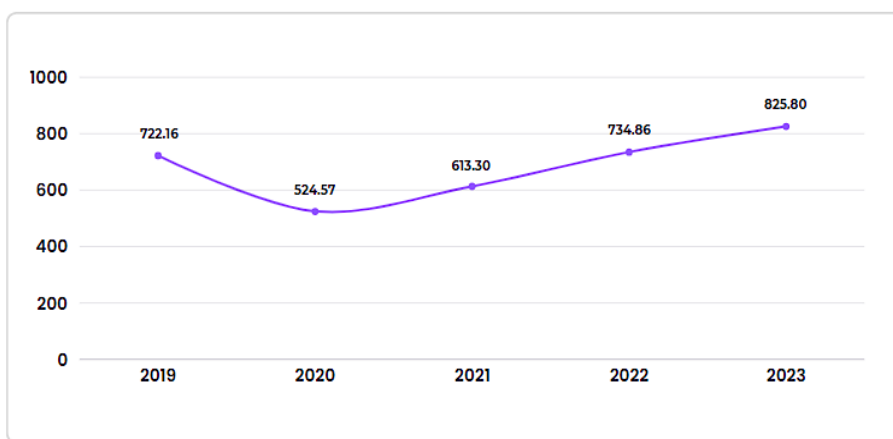

Figure 1. Number of Travelers of the Archipelago

The uncertain and volatile global situation in the midst of the VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) era is a challenge in driving economic growth and tourism development. For this reason, the Ministry of Tourism and Economy accelerates the implementation of projects compiled in the 2020-2024 Short- and Medium-Term Plan (RPJMN) in the form of sustainable tourism, increasing competition, creating added value, and accelerating added value with digital transformation [4]. These innovations are reflected in the development of digital technologies that enable travel personalization, increased user engagement, and the use of real-time data to make decisions quickly. The strategy also enhances global competitiveness by incorporating local technologies, supporting cultural and environmental sustainability, and introducing smart tourism for efficiency and sustainability. Digital transformation in the tourism sector is not only a response to change, but also a catalyst for innovation in the long term that shapes an inclusive, sustainable and adaptive tourism ecosystem. Along with technological advances, various regions in Indonesia have begun to develop a mobile application that covers the big picture of tourism in the area. Mobile apps are software

applications designed to operate on mobile devices (such as Smartphones, Tablets, or iPods) and are supported by an operating system that allows the software to function independently [5].

The Dolan Banyumas application is an application released in 2021 by the Banyumas Youth, Sports, Culture and Tourism Office (Dinporabudpar). The Dolan Banyumas application was developed to facilitate the search for information about tourist attractions in Banyumas. This application offers comprehensive tourist information, including tourist destinations, culinary, lodging, souvenir centres, various tourist villages, as well as tour packages and travel agency directories in Banyumas Regency [6]. To assess user satisfaction with the Dolan Banyumas application, a survey was conducted using a questionnaire. The sample population consists of individuals who provide reviews on the Dolan Banyumas application. From the data obtained there are 604 reviews. To determine the number of samples needed, this study used the Slovin formula. After calculating using the Slovin formula, the results obtained were 24 respondents needed and re-adjusted to 30 respondents. Based on the results of the questionnaire, most respondents, around 40% mentioned that the app's appearance was not attractive enough. In addition, 27% of users complained that there were features that did not function optimally, and 23% felt that the data entry process was too complicated. Meanwhile, around 10% of users also revealed that information on some tourist destinations was still very minimal.

There are several previous studies related to the research to be carried out, so that they can be used as references and state of the art. Previous research by Hadi are focused on improving the user interface and user experience of the Mulawarman University Industrial Engineering department website using design thinking methods. This research identified usability and user experience issues, such as unattractive appearance and difficulty in use, and measured improvements through the System Usability Scale (SUS) and User Experience Questionnaire (UEQ). The results showed significant improvements in attractiveness, accuracy, and usability after the redesign. This research demonstrates the effectiveness of a design thinking approach in improving user experience [7]. Another research by Soedewi used a design thinking approach to design MSME websites in the culinary sector. The purpose of this research is to improve the promotion of MSMEs through designs that are not only aesthetically pleasing, but also focus on user experience. By applying the five stages of design thinking, this research succeeded in creating a website that met the needs of users and was well received. Testing with 30 participants showed positive acceptance of the design, navigation, and completeness of information on the website [8]. Research conducted by Zidni Elma on usability testing using the System Usability Scale (SUS) on the Subscene.com website shows that this platform has a success rate of 82.7%, an efficiency of 0.27 tasks per second, and an average SUS score of 80.2. These results

show that the Subscene website fulfils the criteria of good usability, including effectiveness, efficiency, and user satisfaction. However, this study is limited to usability evaluation without further exploration of feature development or service optimisation based on user needs [9].

Therefore, this research will redesign the UI/UX of the Dolan Banyumas application. There are two important elements in product design, including User Interface and User Experience. User interface refers to what is seen when interacting with the application, while user experience includes what users feel and encounter during their interaction with the application [10]. This research was conducted using the Design Thinking method where there are 5 stages including Empathize, Define, Ideate, Prototype, and Test. This method was chosen because of its emphasis on understanding in overcoming complex problems and its concentration on elements of desirability, feasibility, viability [11][12]. Using design thinking can effectively address the problems and challenges faced, such as improving usability and enhancing the overall experience offered [10]. Design thinking is a design methodology that offers creative solutions to complex problems [13]. This method is often used as an approach in terms of sustainability issues that tend to be complex. The design thinking approach is used in this research because it focuses on deep understanding of user needs and creative problem solving. Design thinking has five stages namely empathise, define, ideate, prototype and test which can help to identify user needs, develop innovative solutions, and iterative testing.

The redesign process in this research focuses on optimising the user interface and user experience of the Dolan Banyumas application. User interface (UI) refers to a visual display that acts as a connection between the user and the device [14]. The user interface consists of graphical elements that are made to be easily understood by computer users and engineered to operate effectively on computer operating systems [15]. The main purpose of User Interface (UI) is to improve functionality and overall user experience. Meanwhile, User Experience (UX) refers to the process that allows users to engage with the interface in a comfortable and efficient way [16]. Primarily, user experience (UX) is designed to increase user satisfaction when navigating a display, whether it is on a website, mobile application, or desktop platform. user experience (UX) serves as an important connection between the user and the product.

This research aims to evaluate the application of the design thinking method in the process of redesigning the Dolan Banyumas application, in order to improve the quality of the user interface (UI) and user experience (UX). In addition, this research can be a source of reference for future research, especially for those who focus on developing UI/UX to improve user experience.

2. METHODS

In redesigning the Dolan Banyumas application, the design thinking method is used. The design thinking method is used because the approach is solution-oriented to overcome complex problems with the aim of understanding user needs. Design Thinking is a design methodology that focuses on human needs, aimed at overcoming challenges and encouraging new innovations [17]. Through this method the research is focused on reformulating the problem, collecting ideas through brainstorming, creating prototypes, and conducting testing to solve the problem [18]. More clearly, this method has five stages including empathize, define, ideate, prototype, and testing. The flow of design thinking can be seen in Figure 2.
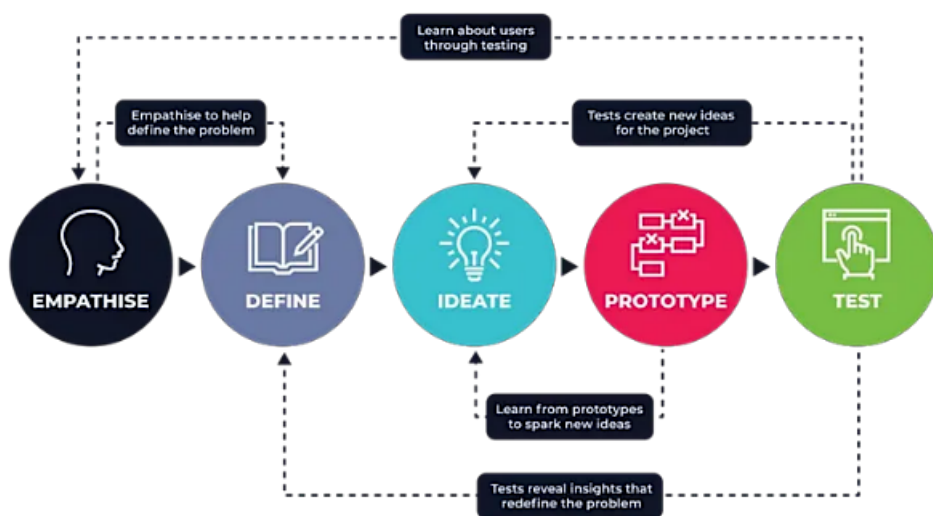

Figure 2. Flow of Design Thinking Method [19].

Based on Figure 2 can be explained as follow.

2.1. Empathize

This stage is the earliest stage of the design thinking method. At this stage, interviews or observations are conducted to find out the needs of users. This research aims to find out more about the needs, desires, and difficulties faced by users of the Dolan Banyumas application. To gain a deeper understanding of user experience, methods such as observation, data collection using scraping, and direct interviews are used. Scraping is done with the help of tools like Google Colab. This empathy stage forms an important basis in designing user-centered solutions,

allowing researchers to identify problems in depth and create solutions that truly fit user needs.

2.2. Define

At the define stage, the main focus is to identify problems based on user needs. The data collected at the empathize stage is analyzed to formulate a clear and specific problem statement, so that the proposed solution can have a significant impact in the application redesign process. Feedback analysis is conducted to uncover pain points or key issues, such as difficult navigation, incomplete information, or uncomfortable design. Each pain point is then formulated into "How Might We" questions designed to trigger creative ideas for solutions.

2.3. Ideate

At this stage, activities are directed towards developing solution concepts based on user needs, which will be the basis for creating interface designs and prototypes. In addition, this stage is also aimed at creating creative and innovative solutions based on previously discovered problems, which will then be further tested.

2.4. Prototype

The prototype stage is the last stage in design thinking. At this stage, the collection of ideas or ideas obtained from the previous stages is used to design a prototype application system or website. Prototypes allow the system to run properly and can be used for initial testing to users, so that input can be received quickly and design iterations can also be completed quickly.

2.5. Test

The prototype stage is the last stage in design thinking. At this stage, the collection of ideas or ideas obtained from the previous stages is used to design a prototype of the application system or website. Prototypes allow the system to run well and can be used for initial testing to users, so that input can be received quickly and design iterations can also be completed quickly. in this study, the usability evaluation method used is System Usability Testing (SUS), SUS is defined as a series of activities to collect data related to the use of applications involving end-user interactions to achieve a certain level of usability, one of which is by using the System Usability Scale (SUS), which is a tool used to assess the extent to which a system or product can be used easily by users through a number of questions designed to evaluate the ease of use of the system [20] [21].

3. RESULTS AND DISCUSSION

3.1. Empathize

In this empathize process, research is carried out by conducting observations by collecting data from user reviews who have used the Dolan Banyumas application regarding obstacles to using the application, especially on the user interface. User interface is a display that becomes a point of human interaction with software or a particular service. User interface is one of the important things in a redesign process. The review data collection technique used is web scraping. Scraping is a method used to collect data or information from websites automatically [22]. The data retrieval process in this study uses the python language which is run on Google Collaboratory. In the process of scraping reviews of the Dolan Banyumas application on Google Playstore, Google Colab loads the HTML code from the destination web page, after which the programme will load the review data automatically and the data can be extracted into a specific file.

3.2. Define

The purpose of this define stage is to define the problems obtained from users and used as a basis for designing application prototypes. At this stage, the problems found at the empathize stage conveyed by Dolan Banyumas users through google playstore reviews are then compiled concisely in the form of Pain Points. A more detailed arrangement of pain points can be seen in Table 2.

Table 1. Pain Points of Dolan Banyumas Application Users

No.	User Problems of Dolan Banyumas Application
1.	The application is still quite confusing for users. Easy login/registration is using facebook account or google account.
2.	Just registering, having to fill in NIK, full address etc. is very strange. Please check other applications that are more popular and national and even international, just use an email or cellphone number, unless there is a transaction.
3.	The application is still difficult to use and less practical, still only brief information and needs to be clarified again for information on various additional features.
4.	Still need to be improved, such as tourist information and entrance ticket prices at each location are not listed.
5.	It is necessary to add trans banyumas bus routes not only tourism buses.
6.	User Interface is still lacking with some messy feature placement.
7.	It is still difficult to input data because there are too many to fill in and the placement is not enough.
8.	The application is less helpful, please improve it again. Tourist information is not clear, ticket booking is incomplete, user friendliness is lacking.

No.	User Problems of Dolan Banyumas Application
9.	There are still many applications that have no information and little information, it is better to add more information. CS contacts also need to be added and should be more informative.
10.	The application is quite helpful, but some features are still not working properly, suggestions for the appearance are designed to be more modern and easier for users.

From the arrangement of pain points obtained previously, then arranged into How Might We questions. How might we be used to build a concept to solve problems from users. More detailed questions can be seen in Table 2.

Table 2. How-Might We User Problems

No.	Pertanyaan How-Might We
1.	How to make the sign-up and login process simple while still maintaining the data requirements during transactions?
2.	How to present clear and complete information on tourist descriptions to make it more practical and easier for users?
3.	How to improve the layout of features in the user interface to make it more structured and aesthetic?
4.	How to design the appearance of the application to be more modern and user friendly so that users feel comfortable when using the application?
5.	How to improve app usability and provide detailed and accurate information on each app feature to enhance user experience?

3.3. Ideate

At the ideate stage, a solution is sought from the existing pain points and how might we. In this process, research focuses on identifying problems that have been obtained previously. The ideate stage is also the stage of preparing innovative ideas and solutions that are integrated into the design of the Dolan Banyumas application. each concept and solution is thoroughly identified to ensure that the application design is designed according to user needs. Solution ideas can be seen in more detail in Table 3.

Table 3. Solution Ideas

No.	Solution Ideas
1.	Initial registration only includes Name, Email, and Password. If there is a transaction, users are asked to update their personal data by adding E-mail and Mobile Number.
2.	Add a Help feature to make it easier for users to understand how to use the application and connect to customer service in real time.
3.	Reorganize some of the services available in the application so as not to confuse users and fulfill the aesthetic elements of an application.

No.	Solution Ideas
4.	Clarify information related to tours and combine the ticket booking feature in the tour details feature to make it easier for users when booking tickets.
5.	Add Trans Banyumas bus routes to the available transportation features and add a Map View feature so that users can track the location of the nearest bus stop.
6.	Simplify data input on ticket booking so that users do not have difficulties.
7.	Adding a menu bar to make the appearance more modern and easily accessible to users, the menu bar will be adjusted to the existing features to make the application more organized.

The analysis conducted at the ideation stage was developed and summarized into a flowchart, so that users could easily understand and navigate the process. The results of the flowchart designed from the ideation process can be seen in Figure 3.
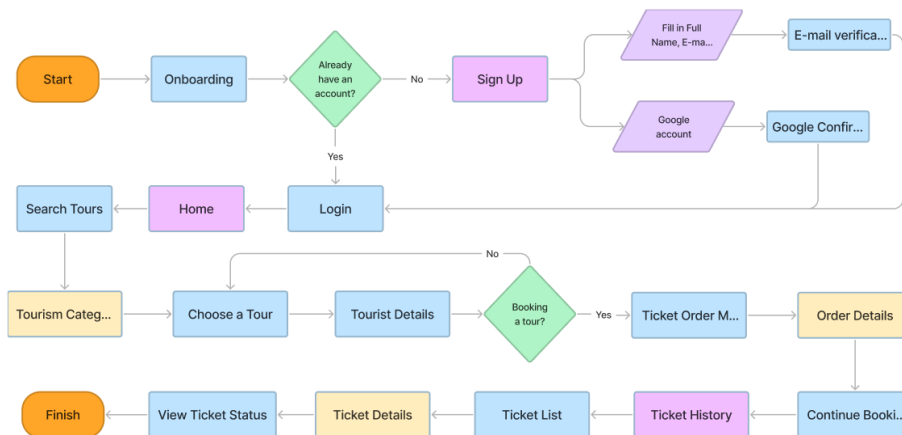

Figure 3. Flowchart of Dolan Banyumas Application

3.4. Prototype

At this prototype stage, a visualization design is made from the results of brainstorming in the previous stage. Prototype design using Figma design tools starts with designing a wireframe design. Wireframe consists of two elements, namely Low-Fidelity and High-Fidelity.

3.4.1. Low Fidelity Wireframe

Low Fidelity Wireframe serves as an easy and effective application framework that starts the design process and conveys features intended for user display, which includes the main functions, settings, and overall structure of the application or product. The low fidelity wireframe design of the Dolan Banyumas application can be seen in Figure 4.
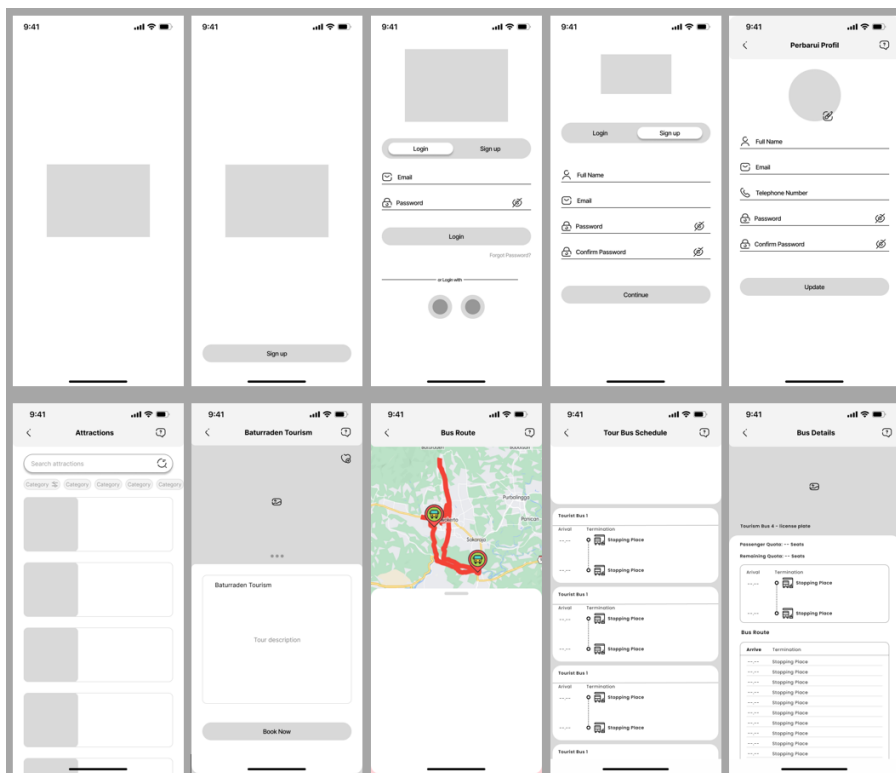
Figure 4. Wireframe of Dolan Banyumas App

3.4.2 High Fidelity Wireframe

While High Fidelity Wireframe is a more advanced and detailed phase in wireframe creation compared to low-fidelity wireframe from the results of the low fidelity wareframe design, the final design (high fidelity) of the Dolan Banyumas application can be seen in Figure 5, Figure 6, and Figure 7.

Figure 5 shows the results of the redesign of the Dolan Banyumas application home page which includes the onboarding, registration, login, and profile update pages. This redesign process was designed to better meet user needs and follow common application registration standards, thus minimizing potential confusion during the registration process. The app's appearance has been updated to a more modern and organized style, complemented by fresh color choices and a more systematic layout of features to improve user experience.
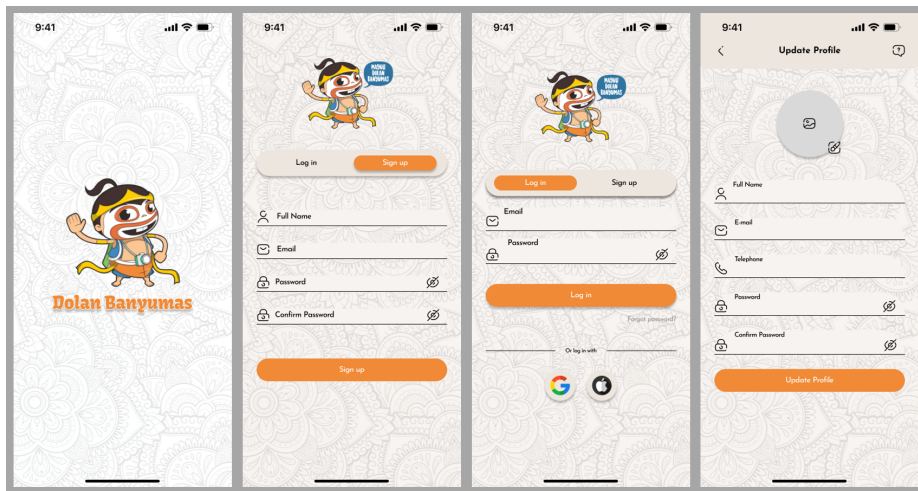
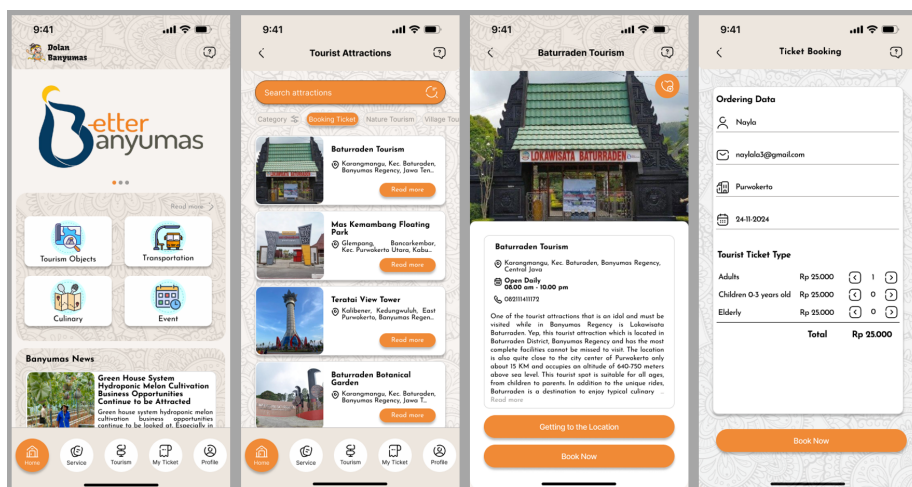**Figure 5.** Onboarding Screen, Register, Login, and Update Profile

Figure 6. Home, Tour List, Tour Description, and Ticket Booking Views

Figure 6 shows the result of the redesign of the application's main page, which was created with the user's need for the main features to be strategically placed on the page. The list of tourist attractions in Banyumas has now been reorganized, making it easier for users to find a variety of travel options with just one click on the main menu. In addition, the list of destinations can be organized by category, providing more flexibility in search. Tourism descriptions have been updated with clearer and more detailed information, including opening hours, complete location, as well as directions to the destination, for easier access for users.
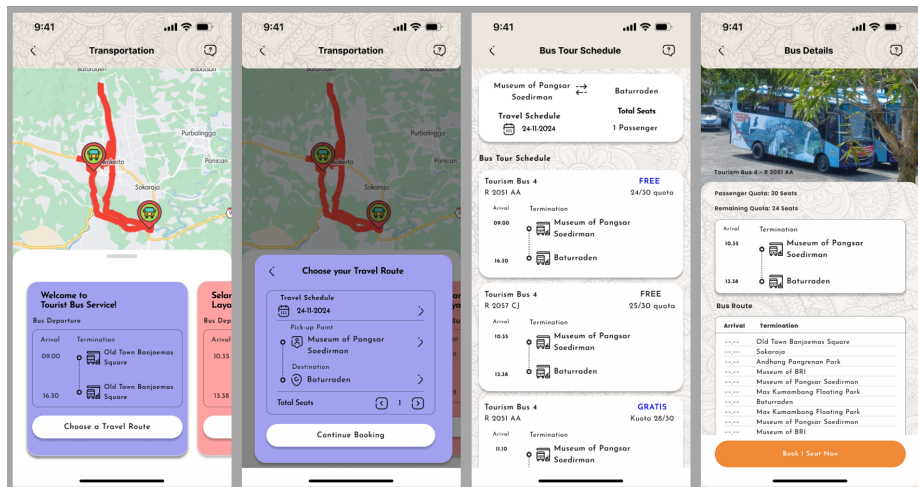
Figure 7. Tour Bus Booking Display

Figure 7 shows the result of the redesign tour bus booking page with a more modern and structured design. The list of bus schedules is now arranged more neatly and separated to make it easier for users to choose the bus that suits their needs. Any information regarding the tour bus is also displayed in an organized manner. In addition, the bus travel route that each vehicle takes is clearly listed in the description, making it easier for users to determine the departure and stopping points of passengers. A help feature is also added to the top right corner of each page, so that users who are still confused about using the application can access the help feature.

3.5. Test

Usability testing is a method used to assess the functionality of software, websites, or products being developed [23]. In this test, data collection will be carried out through the designed task scenario prototype. This task scenario is needed to assess how well the design designed from the Dolan Banyumas application redesign prototype can meet user needs when performing certain tasks. The task scenario that has been designed has five tasks that have been prepared and can be seen in Table 4.

Table 4. Usability Testing Task Scenario

Task Code	Usability Testing Task Scenario
TS01	Account registration and login
TS02	Tour Ticket Booking
TS03	Tourism Bus Booking
TS04	Tourist Menu Exploration
TS05	Setting User Profiles

Based on Table 4, the task scenario is made based on the needs of the Dolan Banyumas application. the target scenario is taken from all circles of Banyumas society, including teenagers to adults who have an interest in traveling in the Banyumas area with a total of 30 people as respondents consisting of students, housewives, Banyumas residents and residents outside Banyumas. According to Nielsen, in usability testing it is sufficient to use 5 respondents to show the laziness of the system design and a minimum of 20 respondents to get a quantitative response [24].

The trial was conducted with a usability testing system through interviews with respondents. In this testing phase using the System Usability Scale (SUS) approach to evaluate the usability value of the prototype that has been designed. SUS is conducted by asking 10 questions posed to respondents on a Likert scale of 1 to 5, with 1 being full disagreement and 5 signifying full agreement. For example, the questionnaire questions used for the SUS method are as follows:

Table 5. SUS Questionnaire Questions

No.	Questions	Skor
1.	I think I will use the Dolan Banyumas app again.	1-5
2.	I think the Dolan Banyumas app is quite complicated to use.	1-5
3.	I think the Dolan Banyumas application is easy to use.	1-5
4.	I need help from others in using the Dolan Banyumas application.	1-5
5.	I think the features of the Dolan Banyumas application can be used well.	1-5
6.	I think there are many inconsistencies in this application.	1-5
7.	I think others will understand how to use the Dolan Banyumas application quickly.	1-5
8.	I think I am quite confused in using the Dolan Banyumas application.	1-5
9.	I don't think there are any significant obstacles in using the Dolan Banyumas application.	1-5
10.	I think I need to familiarize myself first before using the Dolan Banyumas application.	1-5

Based on the questions listed in Table 2, respondents were given 1-5 scale options to indicate their level of agreement with each statement regarding the application under test. The scores from each questionnaire statement are then combined and converted into a final score on a scale from 0 to 100 [25]. The following is the calculation method to determine the final SUS score.
1. For all questions with odd numbers, namely numbers 1,3,5,7, and 9, the total score will be reduced by one.
2. For each question with an even number, namely 2,4,6,8, and 10, the score given by the respondent will be used to subtract 5.

3. The final score is the combined value of the odd and even number calculation results, then multiplied by 2.5.

There are test limitations that become user tasks, namely the Account List, Account Login, Profile Update, Ticket Booking and Tour Bus Booking features. The following are the results of the score calculation of the SUS question which can be seen in Table 6.

Table 6. Results of SUS question calculation

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Total	Total x 2,5
R1	4	2	3	4	4	2	3	2	4	3	31	77,5
R2	4	4	3	2	3	4	4	4	4	2	34	85
R3	4	3	4	2	4	3	4	4	3	4	35	87,5
R4	3	4	4	4	4	3	3	3	3	3	34	85
R5	4	3	4	2	4	2	4	3	4	2	32	80
R6	3	4	4	3	2	4	2	2	4	4	32	80
R7	3	2	3	3	3	2	2	2	3	4	27	67,5
R8	3	4	4	4	3	2	4	4	4	3	35	87,5
R9	2	3	3	4	4	3	2	4	3	3	31	77,5
R10	3	4	3	3	4	3	3	4	3	4	34	85
R11	3	4	3	2	3	2	3	2	4	2	28	70
R12	3	2	3	2	4	4	3	4	3	3	31	77,5
R13	3	3	4	4	4	2	4	4	3	4	35	87,5
R14	2	4	4	3	3	3	4	2	2	3	30	75
R15	3	3	4	3	4	2	4	3	4	3	33	82,5
R16	4	3	2	4	3	2	4	3	4	4	33	82,5
R17	3	4	3	4	3	4	4	3	4	4	36	90
R18	3	3	3	4	3	4	4	4	3	4	35	87,5
R19	3	2	4	2	3	3	4	3	3	3	30	75
R20	4	4	3	3	4	2	4	2	4	3	33	82,5
R21	4	2	4	3	2	2	3	3	3	3	29	72,5
R22	3	4	3	4	4	2	3	4	4	2	33	82,5
R23	3	4	3	4	3	4	2	4	2	4	33	82,5
R24	4	3	4	4	4	4	4	2	4	4	37	92,5
R25	4	4	4	4	4	2	4	2	4	2	34	85
R26	3	4	3	2	4	3	3	3	4	2	31	77,5
R27	3	2	4	3	3	2	4	4	3	3	31	77,5
R28	4	4	3	4	4	4	3	2	4	3	35	87,5
R29	3	3	3	2	4	3	3	2	3	4	30	75
R30	3	4	3	3	4	4	3	4	3	4	35	87,5
Total												**2442,5**
Average SUS Score												**81,42**

Based on the calculation results in the table above, the average SUS score obtained is 81.42 from the initial condition of 63 (quite good). In Figure 8, the value obtained is included in the Grade Scale category on a B scale, Acceptability Ranges are in the Acceptable category which means the system can be accepted by users, and Adejctive Rating is in the Excellent category.
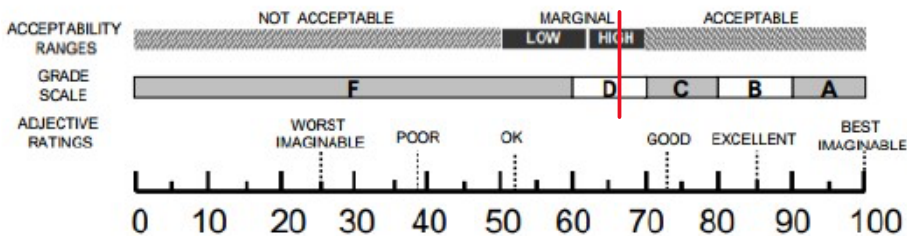

Figure 8. SUS rating score

NPS and SUS have a very strong correlation. From the average SUS score, perhaps 30% or 50% of users will recommend the tested system [26]. NPS has three categories: Promoter, Passive, and Detractor. Promoter is between the values of 78.9 and 100, Passive is between the values of 62.7 and 78.8, and Detractor is between the values of 0 and 62.6. From the tests carried out, seen from the range of NPS values, the SUS score from this study, which is 81.42, can be interpreted as being at the Promoter value, which means that users will recommend the Dolan Banyumas application to other users.

3.6. Discussion

The results of this study provide valuable insights into the usability challenges of the Dolan Banyumas application and the impact of redesign efforts in improving user experience. By following a structured design thinking approach, the study identified critical user pain points and developed targeted solutions to enhance the application's interface, functionality, and overall accessibility. The findings highlight the significance of user-centered design (UCD) in ensuring that digital applications meet user expectations and provide a seamless experience.

The user pain points identified during the empathize stage revealed several issues related to the complexity of the registration process, lack of clear tourist information, and poor user interface design. Many users found the sign-up process overly complicated, requiring unnecessary personal details such as NIK and full address, which are not standard for non-transactional applications. This excessive data entry discourages new users from completing the registration process. To address this, the redesign simplified account creation by requiring only basic details, with additional information requested only when transactions are made.

This progressive disclosure approach reduces friction during onboarding and improves user retention, aligning with best practices in digital product design.

Another major usability issue was the lack of comprehensive tourist information within the application. Users expressed frustration over missing details such as ticket prices, opening hours, and bus routes, which are crucial for trip planning. This highlights the importance of content clarity and accessibility in tourism applications. In response, the redesign focused on enhancing information presentation, integrating clear descriptions, and improving the organization of travel-related data. Adding a Help feature was also proposed to assist users in navigating the app and accessing customer service in real time. These improvements ensure that the application functions as a reliable travel companion, rather than just a basic directory of tourist destinations.

The user interface (UI) and navigation layout were also cited as problematic, with users reporting confusing feature placement and a lack of modern design elements. Poor UI design can significantly impact user engagement by making the application difficult to navigate. The redesign efforts addressed this by reorganizing the feature layout, improving visual hierarchy, and implementing a structured menu system for better usability. The addition of aesthetic enhancements, such as modern color schemes, improved typography, and streamlined layouts, further contributed to a more user-friendly and visually appealing experience.

To validate the effectiveness of these redesign efforts, usability testing was conducted using the System Usability Scale (SUS). The results showed a significant improvement, with the SUS score increasing from 63 (moderate) to 81.42 (excellent). This indicates that the redesigned application is not only more functional but also better received by users. According to SUS rating standards, this score places the Dolan Banyumas application in the "acceptable" category, confirming that users find the new design more intuitive and easier to use. The Net Promoter Score (NPS) analysis further reinforces this, as the SUS score places the application in the Promoter category, meaning that users are likely to recommend it to others. These findings demonstrate a strong correlation between improved usability and increased user satisfaction, underscoring the importance of continuous UX evaluation.

The success of the redesigned application highlights key principles of effective UX design in tourism-related digital platforms. Progressive onboarding minimizes barriers to entry, ensuring that users can quickly start using the application without frustration. Comprehensive and well-structured information presentation enhances the application's usefulness, making it a more reliable tool for travelers. Modern UI design and logical feature organization improve ease of navigation, fostering a more engaging user experience. Furthermore, integrating user feedback

through iterative testing ensures that design changes address real-world usability concerns, rather than being based on assumptions.

While the improvements made to Dolan Banyumas have significantly enhanced its usability, future enhancements can further optimize the user experience. One potential addition is AI-driven personalization, where the application could suggest travel destinations based on user preferences and past interactions. Integrating real-time updates and push notifications about weather conditions, special events, or transportation schedules could further enhance user engagement. Additionally, introducing offline functionality would make the application more useful in remote areas where internet connectivity may be limited. Expanding multilingual support could also help attract international tourists, broadening the application's user base.

Another area for future exploration is gamification, which has been proven to increase user engagement and retention in digital applications. Features such as reward points for frequent travelers, interactive challenges, or social sharing options could encourage more users to explore and interact with the app. Additionally, incorporating A/B testing for future UI modifications would allow designers to continuously refine the experience based on real user behavior.

This study demonstrates that a structured and user-focused redesign process can significantly improve the usability and functionality of a digital application. The redesign of the Dolan Banyumas application successfully addressed key pain points, resulting in a higher SUS score and improved user satisfaction ratings. By focusing on simplicity, clarity, and intuitive design, the application is now more accessible and user-friendly. However, continuous improvements and innovations, such as AI integration, gamification, and real-time updates, can further enhance the application's long-term success. This study highlights the critical role of iterative UX design and usability testing in creating digital products that truly meet user needs, ensuring better adoption and sustained user engagement in the future.

4. CONCLUSION

The findings of this study demonstrate the importance of user-centered design and iterative improvements in enhancing the usability and effectiveness of the Dolan Banyumas application. Through a structured design thinking approach, including empathizing with users, defining key issues, ideating solutions, prototyping, and testing, significant improvements were made to the application's registration process, user interface, feature organization, and content clarity. Addressing these usability challenges has resulted in a more intuitive, visually appealing, and functionally efficient application that better meets the needs of its users.

The System Usability Scale (SUS) results, which showed an increase from 63 (moderate) to 81.42 (excellent), validate the success of these improvements. This enhancement indicates that users now find the application more accessible, efficient, and enjoyable to use. Furthermore, the Net Promoter Score (NPS) analysis confirms that users are highly likely to recommend the application to others, which is a strong indicator of user satisfaction and adoption potential. These results emphasize the critical link between usability, user satisfaction, and engagement, underscoring the necessity of continuous evaluation and refinement in digital application development.

Despite these improvements, there remains potential for further enhancements to maximize user experience and engagement. Future iterations of the application could incorporate AI-driven personalization, real-time updates, gamification elements, offline functionality, and multilingual support to expand its accessibility and usability. Additionally, continuous usability testing, A/B testing, and user feedback integration will be essential for maintaining and improving the application's effectiveness over time. this study highlights that analyzing user feedback, identifying key pain points, and implementing targeted design improvements can lead to significant enhancements in digital application usability. The Dolan Banyumas application now provides a smoother, more informative, and user-friendly experience, making it a more reliable tool for travelers and locals alike. Moving forward, adopting an agile and data-driven approach to design enhancements will ensure the application's continued relevance and success in meeting the evolving needs of its users.

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