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The Application of User Experience Questionnaire to Evaluate Customer Experience When Using Digital Platform to Purchase Flight Ticket in Two Travel and Ticketing Digital Companies

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Abstract

This research aims to find out the results of the assessment and comparison of user experience in online airline ticket booking applications using the user experience questionnaire (UEQ). Data collection methods include using literature studies and distributing questionnaires. The sampling technique used in this research was a simple random sampling method with a total of 100 respondents. Validity tests and reliability tests are also carried out using statistical calculations and tools. Based on the average score assessment on each travel A and travel B application scale using the UEQ questionnaire, both applications have a good overall user experience (UX) level. In travel application A, the average score for each scale, such as attractiveness, is 2.6, clarity is 2.4, efficiency is 2.5, accuracy is 2.4, stimulation is 2.5, and novelty is 2.5, all of which indicate that this application scored above or at least equal to the established "excellent" threshold. Meanwhile, for travel application B, the average score on each scale also shows that this application reaches a good UX level. The average scores for the attractiveness scale were 2.4, clarity was 2.5, efficiency was 2.5, accuracy was 2.3, stimulation was 2.4, and novelty was 2.2, all meeting or exceeding the threshold value of "excellent." From these results, it can be concluded that travel has a good performance in providing a satisfactory user experience on the online airline ticket booking application. Although there are slight variations in the average scores on several scales between the two applications, both overall provide an excellent user experience based on evaluation using the UEQ questionnaire.

Keywords: User Experience, Airline Ticket, Travel, User Experience Questionnaire.

1. Introduction

Consumers in Indonesia have a variety of options from different OTAs. Customers typically compare all platforms before selecting an OTA in order to receive the best deal from the largest OTAs in the nation, Traveloka and Tiket.com. When it comes to providing better service to users when they purchase airline tickets on the app, travel is crucial [1]. One of the secrets of the application's success is to keep the requirements and feelings of the user in mind [2]. Traveloka is a travel agency with a mobile app that streamlines the online booking process for airline tickets and offers a one-stop shop for all things travel related, including rail and airline tickets, leisure, and more [3]. Working together, more than 100 local and foreign airlines have provided service on over 200,000 flight itineraries globally [4]. The travel app is the most downloaded smartphone application in Southeast Asia with 32 million downloads [5]. The first OTA in Indonesia is called Tiket.com. Established in 2011, this travel agency leverages advancements in the digital space to simplify the process of ordering airline tickets, monitoring airfares and promotions from any location at any time, and selling tickets with several airlines [6]. The prices and time involved in obtaining traditional tickets can be summarized with the help of information technology [7]. Online tickets experienced growth from the previous year, namely an increase of 11% to more than $690 billion [8].
Reviews from the Google Play Store found various awards for the No. 1 ticket booking application [9]. 1 in Indonesia and is the first OTA in Indonesia and has various awards and is known to be the most popular online travel agency in 2020, the first place is Traveloka then Tiket.com [10], but reviews from the Google Play Store on the online airplane ticket booking application have users who are still confused regarding the information provided provided, such as flight schedule information, so that users are confused about valid flight schedules, and several features that do not work properly when they want to make a ticket order such as ticket search and payment pages, for this reason it is necessary to evaluate the UX of both applications which have characteristics and business processes which is also the same as making it easier for users when using the online plane ticket booking

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application [11]. UEQ is a measurement that can provide more benefits because it can provide comprehensive measurement results for UX and also has the advantage of measuring UX very quickly [12]. By carrying out evaluations using UEQ, you can measure the level of attractiveness, efficiency, clarity, accuracy, stimulation, and novelty of travel [13].

Previous research was conducted to determine the experiences users gain when using student academic information systems [14]. The UX evaluation results show that all UX aspects have a positive impression, and the benchmark results show that the stimulation aspect is above good criteria, while other aspects are above average criteria [15]. All UEQ categories scored in the positive area. The highest score went to the "perspicuity" category, while the lowest went to the "novelty" category. The Gojek application's rating scale is on the "above average" and "good" scales, according to the benchmark value [16]. The results of the same analysis on Kahoot and Socrative are that the UX on Kahoot is better with all its advantages from all assessment scales. In this study, there was a low assessment on the dependability scale for the unpredictable or predictable items [17]. The UX on Kahoot is fun and innovative [18]. Students prefer Kahoot because the website can attract students' attention in terms of aesthetics and user friendliness. Measurements on the scale of attractiveness, clarity, efficiency, accuracy, and stimulation are below average, while the novelty scale is at a bad level [19]. Previous research shows that the implementation of UEQ gives an impression that tends to be positive, with an average value that reaches a very good impression (excellent) [20].

Previous research that has used the UEQ method to evaluate user experience (UX) in online e-government and FinTech services provides suggestions that add value for future research, especially in the context of research related to UX [21]. One suggestion that can be adopted from previous research is the use of comparisons between types of online e-government services from one agency or from various government agencies as a comparison object [22]. This approach can provide a deeper understanding of the UX comparison between these services. Likewise, the suggestion to compare two FinTech applications can be applied in the context of the Traveloka and Tiket.com airplane ticket booking applications [23]. This can provide a broader perspective on the differences and advantages between the two applications in terms of UX. The main advantage of the UEQ method lies in its comprehensive evaluation of product UX, with a focus on aspects such as attractiveness, pragmatic quality, and hedonic quality [24]. The use of this method is also supported by the availability of the data analysis tool in Excel format, which makes the UEQ measurement and analysis process easier [25]. Based on suggestions from previous research, future research in the field of UX can utilize the UEQ method to carry out comparisons between similar services or similar applications. This can provide a more comprehensive insight into how UX aspects differ between different products or services within the same industry [26]. Apart from that, the availability of easy-to-use data analysis tools can also simplify and speed up the overall UX evaluation and analysis process [27].

Activities related to processes that ensure the value of something are called evaluations. The process of considering a product, thing, or symptom by taking into account various factors called value judgment is called evaluation. The definition of evaluation leads to the conclusion that an evaluation is a process of estimating an object's value based on references to specific objectives [28]. Evaluation at a firm is defined as the process of determining how well the tactics employed to achieve company goals work. Don Norman, a professor of usability engineering, design, and cognitive science, was the one who first coined the term "UX" and is credited with starting the user-centered design movement [29]. According to ISO 9241-210, user experience (UX) is how a person feels and reacts when using a system, good, or service. A well-designed user experience should balance the features with the demands of the user; only then can the product's value or worth be assessed [30]. When something is simple to use for the first time, using it might bring happiness to the user. Through the use of mobile ticketing, you can conduct an online reservation procedure and inquire about or obtain details about the route, date, and cost of an airline ticket. Traveloka and Tiket.com are examples of companies that implement mobile ticketing services [31]. Their applications provide information regarding available airlines, airplane ticket prices, departure times and destinations, and other information [32].

The research conducted using the UEQ method provides suggestions to better consider the varied profiles of respondents, such as age, gender, course, etc., as contributory factors that can influence the user experience. UEQ has the advantage of measuring aspects of a product's user experience very quickly. Research using the UEQ method only considers one type of online e-government service implemented in the Indonesian Ministry of Religion [33]. Government institutions generally have a variety of online e-government services with different functions and purposes, and this researcher does not consider variations in respondent profile characteristics such as age, gender, education, etc. as factors that can influence user experience [34]. In the future, it may involve other statistical tools in understanding or analyzing user experience [35] [36]. Apart from that, it is also better to include types of online e-government services both in one agency and from other government agencies as objects in the study for comparison and to involve several types of user groups as respondents by paying attention to the characteristics of user groups [37]. Previous research provides suggestions for making comparisons between two FinTech applications [38]. Research conducted using UEQ obtained more comprehensive results regarding the user experience [39]. It is hoped that future research can further explore the two applications that want to be

evaluated to obtain more diverse and therefore more accurate data. The conclusion from similar research is that if you use the UEQ method, you should consider the varied profiles of respondents, such as age, gender, course, etc., as contributory factors that can influence the user experience and make comparisons between the two applications.

2. Research Methods

The research stages use diagrams so that they are easy to read and understand. The stages of UEQ scale research are: data collection methods using literature studies and distributing questionnaires; then analysis of research needs, including population and sample selection; sampling techniques; preparation of research materials and tools; and preparation of research instruments. After that, the data analysis method in this research is: testing the feasibility of the questionnaire by testing the validity of the instrument; and testing the reliability by calculating the value of the Cronbach's alpha coefficient. Validity tests and reliability tests were carried out on respondents, with a total of 100 respondents. Analysis of the UEQ measurement results was carried out using the UEQ questionnaire, which consists of 28 questions. There are six UX factors, namely: attractiveness; pragmatic quality aspects, namely perspicuity; efficiency; dependability; and hedonic quality aspects, namely stimulation and novelty. The data obtained from respondents is then processed using UEQ tools by transforming the data from the results of respondents' answers on the two travel applications, then calculating the means per person on the travel application, and then obtaining the results of the UX assessment and comparison based on the UEQ scale and recommendations. The sampling technique in this research used a simple random sampling method with a total of 100 respondents. Validity tests and reliability tests are carried out using statistical calculations using tools, and questionnaires are created and distributed online. The UEQ data is then processed using tools. Report writing and citations are also required for this research material, namely: the respondents selected in the research.

3. Results and Discussion

A comparative analysis between travel A and travel B applications based on user evaluation (UX) can be described as follows: UX assessment based on the UEQ scale has been carried out on both applications, namely travel A and travel B. This evaluation scale includes important aspects such as the attractiveness, clarity, efficiency, precision, stimulation, and novelty of the user experience. The overall average value of each UEQ scale in travel applications shows positive results. Within the established evaluation criteria, with average scores on the attractiveness scale ≥ 1.8, clarity ≥ 1.9, efficiency ≥ 1.8, precision ≥ 1.7, stimulation ≥ 1.6, and novelty ≥ 1.4, both apps received excellent ratings. However, when making a more detailed comparison, there are differences in the average scores between travel A and travel B applications in several aspects. Travel application A has a higher average score on the scale of attractiveness, efficiency, accuracy, stimulation, and novelty when compared to travel application B. However, on the clarity scale, travel application B shows a higher average score compared to travel application A. This indicates that travel B may provide a clearer or easier-to-understand experience for users than travel A in terms of layout, navigation, or feature usage. In the overall evaluation, both travel A and travel B have positive impressions from users. However, travel A consistently demonstrated superior performance in certain aspects of the user experience, while travel B had an advantage in clarity. It is important to note that the evaluation of user experience is subjective and can be influenced by individual preferences and the context of use. Therefore, although there are differences in scores between the two applications, users' priorities may vary based on their personal needs and preferences.

It is important to remember that user experience (UX) evaluation is subjective, as each individual's experience using an application can be influenced by personal preferences, previous experiences, and different contexts of use. While there are differences in scores between travel A and travel B apps, user priorities and preferences can vary greatly based on individual needs and usage situations. For example, a user may prioritize clarity in application navigation when booking tickets, which may be an advantage for travel B. Meanwhile, another user may prioritize aspects of visual appeal or the novelty of the features offered, which may be more accommodated by travel A. Additionally, factors such as preference for user interface (UI), availability of services or promotions, ease of payment, or customer support can also influence how users rate an app. In measuring the merits of an application, it is important to consider the variations in needs and preferences that exist among users. In the world of apps and technology, continuously developing products to improve UX is extremely important. Continuous evaluation and adjustments based on user feedback are key to meeting their needs and expectations. So, while analyzing the scores between travel A and travel B provides valuable insight, understanding that user preferences may vary is crucial in designing or improving an application to suit varying user needs and desires.

The t-test with the assumption of unequal variances was used to find out if there were any significant differences between the average UEQ scales of travel A and travel B, which are the two travel apps. The main aim of this test is to identify the existence of significant differences in the six UEQ scales between the two applications, as well as understand the influence of differences in user characteristics such as age, length of application use, and frequency of use for booking plane tickets on the UX evaluation results of each application. The initial step, data processing, begins by using descriptive statistics to analyze the average scores of the six UEQ scales in the travel

A and travel B applications. This analysis helps in evaluating the differences that arise in specific aspects of the UX between the two applications. Next, the characteristics of respondents from the two applications were mapped to the UEQ scales. It aims to understand how factors such as age, duration of use, and frequency of use can influence a user's perception of UX. This process helps to identify patterns or trends in UX perception that may relate to certain user characteristics. The results of this analysis will provide deeper insight into the differences between travel A and travel B applications in terms of UX, as well as how user characteristics influence their perceptions of the experience of using the airline ticket booking application. This information can provide a solid foundation for further development and improvement of both applications, taking into account different user preferences and needs.

The results of the t-test show significant differences on three scales between travel A and travel B applications, namely attractiveness, clarity, and novelty. It can be seen that the average attractiveness score for travel A's application is 2.6, while travel B has an average score of 2.4. On the clarity scale, the average score for travel A applications is 2.4, while travel B has an average score of 2.5. Meanwhile, on the novelty scale, travel application A got an average score of 2.5, while travel application B had an average score of 2.2. The conclusions from the results of this analysis provide important insights for improving the service and quality of both applications. Significant differences at certain scales indicate areas where each application could be improved. For example, focusing on improving the attractiveness, clarity, and novelty of travel can help improve the user experience. Additionally, looking at how respondent characteristics such as age, length of use, and frequency of use contribute to user perceptions of UX provides valuable information for understanding diverse user preferences and needs. This can be the basis for providing more targeted improvements according to the specific needs of the application users.

The results of measuring user experience (UX) and a comparison between travel A and travel B airplane ticket booking applications based on the six UEQ scales show that there are specific areas where both applications can significantly improve the user experience. In travel application A, there is a focus that can be improved, especially on the scale of clarity or technical aspects when users book plane tickets. This means increasing ease of understanding, ease of learning, simplicity, and clarity in navigation and application features. Thus, we can adjust the design, systems, and services to ensure users feel comfortable and at ease when using this application. In contrast, in travel application B, improvements that can be made focus on increasing the scale of attractiveness in the plane ticket booking process. Increasing the fun, kindness, convenience, attractiveness, and user-friendliness aspects of app use can be an important step to make the user experience more enjoyable and positive. This helps to increase user preference for the travel application B and creates an overall good impression. In addition, it is necessary to increase the scale of the novelty of the application. This means increasing elements of creativity, innovation, and inventiveness and being at the forefront of offering new features that can attract user interest. In this way, travel can attract users' attention with innovative and relevant offers. In conclusion, the main focus for travel A is on clarity or technical aspects of booking, while travel B can focus on attractiveness of use and innovation to create a more enjoyable and interesting user experience. Improving these aspects can help both get closer to user preferences and expectations as well as optimize the UX in their airline ticket booking app.

Based on a comparison of the average scores between the applications on the scale of attractiveness, clarity, and novelty, it can be concluded that there are significant differences between the two. This indicates that there are specific areas that need to be improved in each application to improve the user experience at the plane ticket booking stage. Travel application A could focus more on increasing the scale of clarity, in particular by paying attention to and improving functions related to the airline ticket booking process. This includes aspects of ease of understanding, clarity, and simplicity of the features available so that users can easily navigate and use the application efficiently. On the other hand, for travel B, the focus of improvement can be more focused on the scale of attractiveness and novelty at the plane ticket booking stage. By increasing attractiveness, such as being fun, attractive, and user-friendly, as well as increasing novelty with innovation and interesting new features, we can create a more interesting and engaging experience for users. Data analysis provides clear insight into areas for improvement in each application. By focusing improvement efforts on these aspects, both travel A and travel B can improve the quality of UX at the plane ticket booking stage, in line with user preferences and expectations, and increase competitiveness in the plane ticket booking application industry.

Comparative analysis of user experience (UX) between online airline ticket booking applications using the UEQ scale shows significant differences on three main scales: attractiveness, clarity, and newness. In travel application A, improvements that can be made focus more on increasing the clarity scale. This means paying attention to the functions at the plane ticket booking stage to ensure users can easily understand, learn, and navigate the application simply and clearly. Focusing on technical aspects and ease of the ordering process, both in terms of design, system, and service, will help users feel more comfortable and confident when using it. Meanwhile, for travel B, improvement efforts can be focused on the scale of attractiveness and novelty at the plane ticket booking stage. Increasing attractiveness means creating a pleasant, good, comfortable, attractive, and user-friendly experience when users make transactions. In addition, increased novelty will accommodate the application's creativity,

innovation, and excellence in presenting attractive and leading features in the airline ticket booking industry. In conclusion, focusing on specific improvements to each application will help improve the quality of UX in the airline ticket booking process. Travel A can improve aspects of technical clarity, while travel B can increase attractiveness and innovation to create a better experience for users. Thus, both applications can optimize their respective strengths to attract and retain users, as well as strengthen their position in the online airline ticket booking application market.

4. Conclusion

The results of this research provide an overview of user experience (UX) assessments and user perceptions of ordering plane tickets online via the application. UX measurements were carried out using the UEQ questionnaire, which consists of 26 questions that measure six main UX factors, namely: attractiveness, clarity, efficiency, accuracy, stimulation, and novelty. Overall, both apps get good ratings in terms of UX. The average score on each UEQ scale shows that both are at the "excellent" level. For travel application A, the average score on the attractiveness scale reached 2.6, which is higher than the minimum threshold value of "excellent" of 1.8. Likewise, the clarity scale achieved an average score of 2.4, also above the "excellent" value of 1.9. In addition, scores on the efficiency, precision, stimulation, and novelty scales also meet the "excellent" criteria. Meanwhile, for travel application B, the average score on each UEQ scale also shows a good level of UX. Although the average scores on some scales were slightly below a travel score of A, the scores on the attractiveness, clarity, efficiency, precision, stimulation, and novelty scales all met the established "excellent" standards. In conclusion, both travel A and travel B received very good ratings in terms of user experience based on evaluation using the UEQ questionnaire. Although there is a slight difference in the average scores between the two, both generally provide users with a good experience when booking plane tickets online. This shows that both have their respective strengths in providing a satisfying experience to their users.

Based on the research that has been carried out, there are several suggestions that need to be considered for further research that is interested in similar studies. First, for a more comprehensive analysis regarding user experience (UX), it is recommended to consider the use of other UX theories that can be developed. One way is to use techniques like heuristic evaluation, where experts carry out evaluations based on well-established design principles. With this method, researchers can gain a deeper understanding of the similarities or differences in the evaluation results obtained, as well as highlight specific aspects that influence the user experience. Second is the use of methods such as UX Honeycomb, which explores seven different aspects of the user experience when interacting with the application. This method allows researchers to explore more detailed aspects related to user interactions with applications, such as usability, informative value, trust, enjoyment, and others. By expanding the scope of analysis to these aspects, research can provide more comprehensive insights regarding the UX of airline ticket booking applications. Third, the system usability scale (SUS) method can be a useful addition to get an overall picture regarding the usability of the application system. This method uses a questionnaire to assess the usability of a system by providing a score based on questions related to the user experience. By obtaining scores from users, researchers can get a more measurable picture of the usability of the application being tested. By considering the application of these methods in future research, it is hoped that it will provide richer and more detailed insights regarding user experiences on airline ticket booking applications. This will help to broaden the understanding of how users interact with the application and provide richer input for further development in improving the UX of the application.

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