E-ISSN: 2715-2731

Comparing User Experience Maxim and inDrive Applications Using the User Experience Questionnaire

Fauzi Adi Saputra[1,*], Mia Putri Yeza[2], Muhammad Farhan Fahrezy[3], Amata Fami[4], Irma Rasita Gloria Barus[5]

Software Engineering Technology, Department of Vocational Studies, IPB University, Indonesia

[1]fauzisaputra@apps.ipb.ac.id; [2]miaputriyeza@apps.ipb.ac.id; [3]04fahrezy@apps.ipb.ac.id; [4]amatafami@apps.ipb.ac.id;[5]irmabarus@apps.ipb.ac.id;

* corresponding author

INFO ARTIKEL

Article History
Accepted: 31 March 2024
Revised: 27 April 2024
Published: 30 April 2024

Keywords
Maxim inDrive
Online Transportation
User Experience
User Experience Questionnaire

ABSTRAK

Online transportation applications are vital in meeting daily mobility needs in today's world. The fierce competition between transportation apps like Maxim and Indrive demands a deep understanding of user satisfaction factors to ensure preference and loyalty. This study aims to recognize and compare elements that impact user satisfaction of the two applications. User satisfaction with both applications. Using the quantitative method of data for the User Experience Questionnaire (UEQ) was gathered via an online survey. from 89 respondents. These questionnaires are designed to measure specific aspects of the user experience. The data analysis findings indicate that Maxim achieved a superior user experience score over InDrive because it excelled in attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty. These findings indicate that service availability and the quality of user interaction with the application determine user satisfaction. The conclusion of this study emphasizes the importance of understanding user preferences and providing services that meet their needs and offer a superior user experience. These results can potentially guide the development of strategies to increase user satisfaction and loyalty in the ride-hailing industry.

INTRODUCTION

A deep understanding of the potential and limitations of different platforms through comparisons between technologies is crucial for users and developers. In the context of motorcycle ride-hailing, user experience plays a very significant individual role in determining the success of a service. If users have a terrible experience, there may be features or services that are difficult to access and have a prolonged impact on the business if not immediately corrected [1]. Online transportation services in Indonesia are increasingly varied with the presence of online motorcycle taxis, which require special attention to improve the quality of their services. User experience evaluation is crucial in this effort, focusing on comparing Maxim and inDrive, two online motorcycle taxi service providers in Indonesia. Maxim and inDrive emerged as newcomers that have attracted many customers since they were first launched in Indonesia. This success reflects people's adaptation and preference for innovative, flexible transportation solutions.

A survey conducted by the Research and Development Agency of the Ministry of Transportation in September 2022 [2] found that around 6.93% of people use Maxim's ride-hailing service, while around 1.47% use inDrive. These applications have become dominant players in the Indonesian online transportation market. On March 6, 2024, Maxim ranked first in the Auto and Vehicles category on PlayStore, while inDrive took the top spot in the Maps and Navigation category on the same date, indicating its wide popularity and acceptance among users.

Mulyadi, Fitrianti, and Ridha conducted a study that evaluated the user experience of Maxim's online motorcycle taxi application through the lens of the Human-Computer Interaction (HCI) model. The findings of this study indicate that although some users feel that the application could be more helpful, in general, the user interface presented by Maxim is considered sufficient to meet their needs [3]. However, such research methods only sometimes pay attention to subjective aspects of the user experience, such as emotions or overall perception.

Other user satisfaction analyses using the End User Computing Satisfaction (EUCS) method are more focused on the technical aspects and functionality of the system, so they do not broadly describe the application's emotional, aesthetic, and novelty aspects [4]. Researchers decided to apply the User Experience Questionnaire (UEQ) method based on its advantages as a framework that allows efficient analysis of survey data [5]. UEQ can measure various aspects of user experience directly from the user's point of view, especially on the application's emotional, aesthetic, and novelty aspects. This study adopts six variables from the User Experience Questionnaire: attractiveness, efficiency, perspicuity, dependability, stimulation, and novelty [6].

Unlike the previous study, this study focused on assessing user experience satisfaction and identifying user experience variables rated positively. The study also aims to explore the differences in user experience between Maxim and Indrive applications and their impact on user choices towards these applications. It is hoped that the findings of this study can be a reference source for Maxim and Indrive application developers to improve their applications, as well as a reference for the development of similar applications in increasing user satisfaction through various aspects of user experience.

METHOD

Research Stages

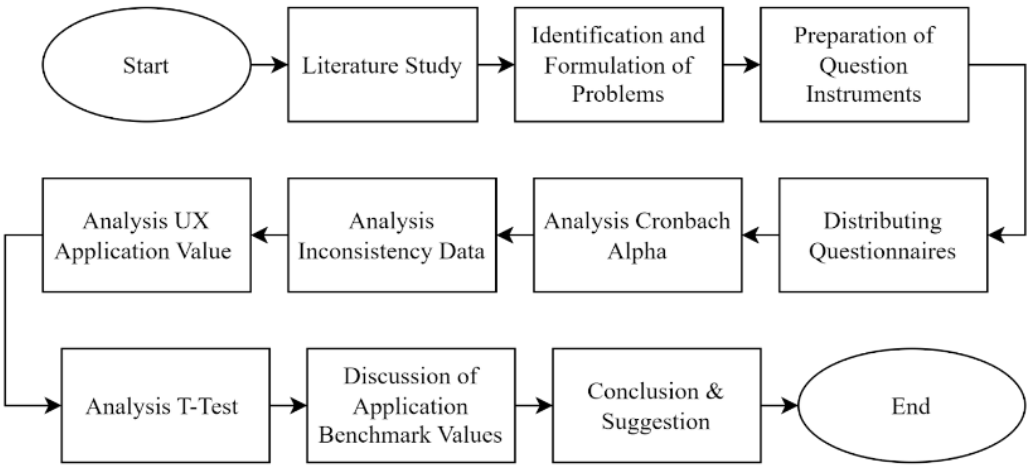


Figure 1. Research Stages

Based on Figure 1, the research begins with a comprehensive literature review to understand user experience concepts in the context of mobile applications. This is followed by problem identification and establishing research objectives. Subsequently, a questionnaire is developed based on the findings of the literature to evaluate critical aspects of user experience. After data collection, analysis is conducted using UEQ data analysis tools to facilitate the researcher in objectively and comprehensively measuring

and comparing user satisfaction levels between the Maxim and inDrive applications [7]. The UEQ analysis stage begins with Cronbach's alpha, used to test the questionnaire's reliability, followed by data inconsistency analysis to ensure the quality and consistency of responses. The questionnaire results are then analyzed to assess the application's user experience (UX) value. Next, a t-test and benchmark application analysis are conducted to compare the UX performance of the applications with those of similar applications. Finally, the research findings are used to conclude the UX evaluation results and provide recommendations for application improvements based on the analysis conducted.

Research Model

This study is a quantitative survey aiming to identify differences in user experience between the Maxim and inDrive applications. One tool that produces more significant benefits is the User Experience Questionnaire (UEQ), which can measure user experience and generate comprehensive results [8]. The main focus is on the user experience variable, which includes six dimensions: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty, which align with the framework introduced by Martin Schreppe [9]. To address the questions in this study, the researcher adopted a comparative descriptive research design, which allows the researcher to compare user experiences between individuals using the applications directly [10].

Analysis Koefisien Cronbach Alpha

The reliability test using Cronbach's Alpha test is conducted for more than one correct answer and instruments in the form of questionnaires. The formula for the reliability coefficient is as Equation (1) [11].

$$r_i = \frac{k}{(k-1)}\left\{1 - \frac{\sum s_i^2}{s_t^2}\right\} \quad (1)$$

r_i = cronbach's Alpha reliability coefficient
k = number of items in the questionnaire
$\sum s^2$ = variance of scores for each item
s_t = total variance

While many authors assume that the alpha coefficient value should be at most 0.7 to be considered consistent, this is more of a practical rule and less based on statistically solid grounds. Using such cutoff criteria is less reasonable from a methodological standpoint, especially with small sample sizes (less than 50 responses), where the alpha coefficient value should be interpreted cautiously as sampling errors can influence it. Suppose the alpha coefficient value indicates a significant deviation from the expected target value, for example, 0.6 or 0.7. In that case, this may suggest that some items in the scale have different interpretations by participants than expected. It is advisable to examine the scores of each item and the correlation between items in such cases. This can provide clues as to whether there is a possibility of common interpretation errors for an item due to the evaluation context. In such situations, interpreting the scale in question should be done carefully.

Inconsistency Data Analysis

Inconsistency Data analysis is performed to identify responses that may not be serious or inconsistent, especially in online surveys. This evaluation is done by checking the

difference between each question's maximum and minimum values. Ensuring that all scale questions measure the same aspects of user experience quality is important. Detection of significant discrepancies (>3) can indicate potential issues in the data, such as randomly assigned answers or misunderstandings of certain questions. As a corrective measure, issuing a response that shows a difference in 3 or more values from the dataset is recommended [12].

Apps UX Value Analysis

The User Experience Questionnaire (UEQ) measures user experience (UX) with results that require careful interpretation. The UEQ score does not provide a straightforward overall picture but a score for every item used to detect potential outliers in the evaluation. A range of values between -0.8 to 0.8 indicates a neutral evaluation, above 0.8 is positive, and below -0.8 is negative. Although UEQ scales vary from -3 to +3, in practice, values outside this range are rare due to variations in participants' responses. Values such as +1.5 on the UEQ scale are not as positive as they seem, and for more precise communication, using more limited scale images such as -2 to +2 is recommended.

T-Test Analysis

The results of the T-Test analysis were conducted by researchers to compare user experience and see whether there was a difference in significance [13]. The t-test was used in this study to compare the user experience between two applications, namely Maxim and Indrive. This t-test is done assuming the variance between the two groups is not the same. The alpha level value commonly used is 0.05.

RESULT AND DISCUSSION

The assessment of the user experience for Maxim and Indrive applications is conducted using the User Experience Questionnaire approach. Participants were expected to respond to 26 question items for each application, bringing the total number of items to be answered to 52. This survey managed to collect answers from 89 participants. The grading scale for each item ranges from 1 to 7. Subsequently, the responses from the questionnaire are input directly into the UEQ data analysis tool, accessible through the official UEQ website [14], as the next phase in the data analysis procedure.

Analysis Koefisien Cronbach Alpha

The results showed that the UEQ scale consistently achieved a Cronbach Alpha value that crossed the threshold of 0.7 in each case studied. The information shown in Figure 3, notes that the Cronbach Alpha value for the Maxim and Indrive applications has never been below 0.7.

Table 1. Cronbanch Alpha Coefficient Value

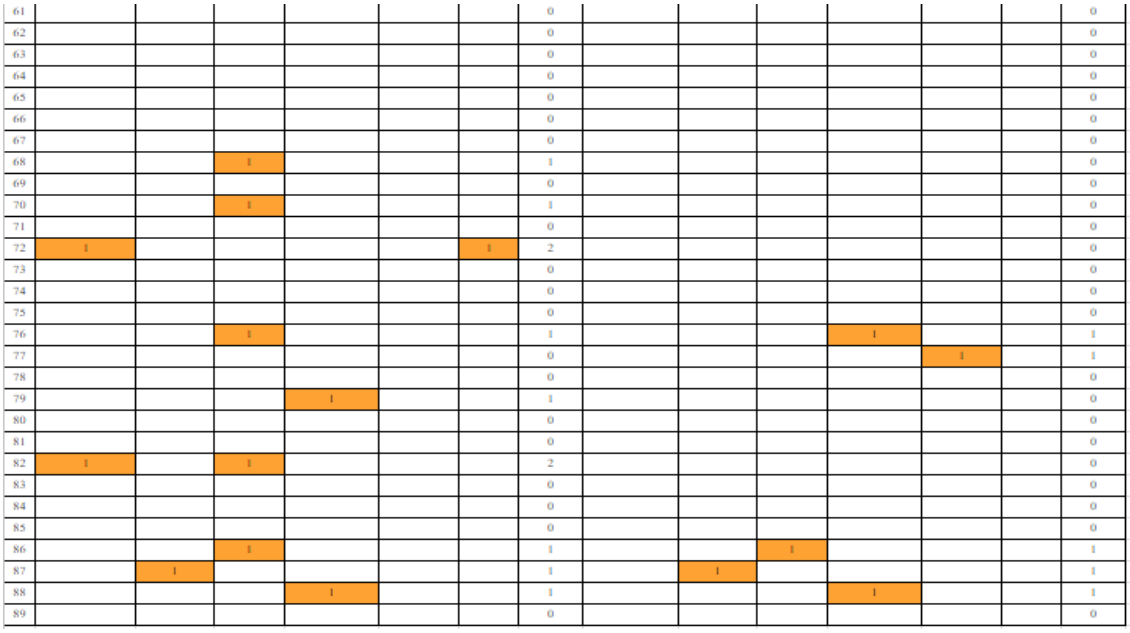
Scale	Cronbach's Alpha-Coefficient	
	Maxim	inDrive
Attractiveness	0,88	0,95
Perspicuity	0,79	0,89
Efficiency	0,75	0,89
Dependability	0,79	0,90
Stimulation	0,85	0,90
Novelty	0,88	0,90

Analysis Inconsistency Data

The data shown in Table 2 can be observed for inconsistencies of 3 or more in responses from respondents numbers 4, 10, and 39 regarding the Maxim application and respondent number 4 for the Indrive application, which allows abandonment or deletion of such data.

Table 2. Data Inconsistency

No	MAXIM							INDRIVE						
	Scales with inconsistent answers							Scales with inconsistent answers						
	Attractiveness	Perspicuity	Efficiency	Dependability	Stimulation	Novelty	Critical?	Attractiveness	Perspicuity	Efficiency	Dependability	Stimulation	Novelty	Critical?
1		1				1	2							0
2							0							0
3							0							0
4	1	1	1	1	1	1	6	1	1	1		1	1	5
5							0							0
6		1					1		1					1
7							0							0
8		1					1							0
9							0		1					1
10	1	1	1		1	1	5							0
11			1				1							0
12							0							0
13							0							0
14			1				1							0
15							0							0
16			1				1							0
17							0							0
18			1				1							0
19							0							0
20							0							0
21					1		1							0
22							0							0
23							0							0
24							0							0
25							0							0
26							0							0
27							0							0
28							0							0
29			1				1							0
30							0							0
31							0							0
32							0							0
33							0							0
34							0							0
35							0							0
36							0							0
37			1				1							0
38			1				1							0
39	1	1		1	1		4							0
40							0				1		1	2
41					1		1					1		1
42	1			1			2	1						1
43							0							0
44							0							0
45							0							0
46							0							0
47			1				1							0
48			1				1							0
49							0							0
50							0							0
51							0							0
52							0							0
53			1				1							0
54							0							0
55							0							0
56			1				1							0
57							0							0
58			1				1							0
59							0							0
60							0							0



UX Value Analysis of Maxim App

Each component on the UEQ scale operates in a range of values from -3 (which indicates the most negative response) to +3 (which indicates the most positive response), where a value of 0 is indicative of a neutral response [16]. UEQ scale measurement in the Maxim application in each component shows a score above +1, as shown in Figure 2.

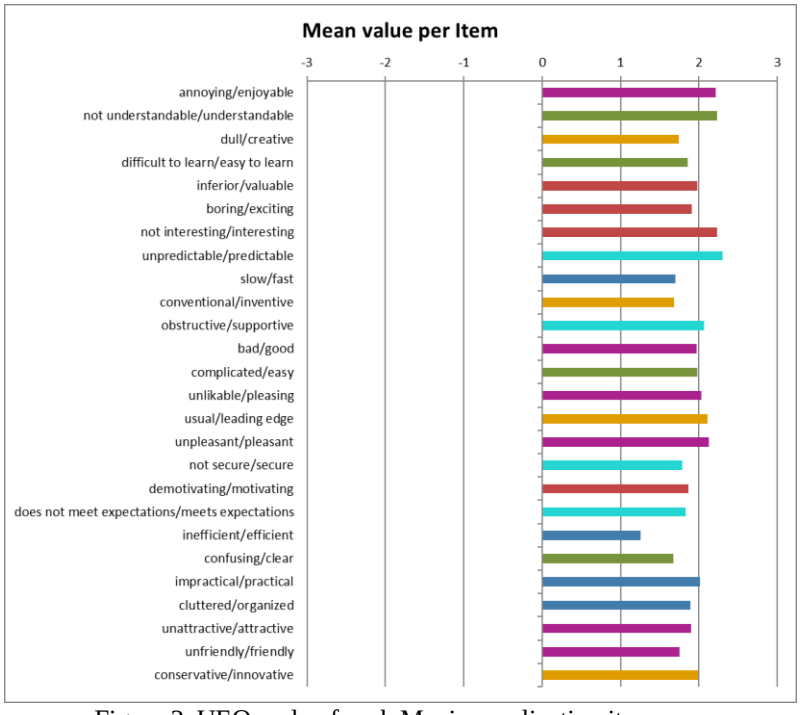


Figure 2. UEQ scale of each Maxim application item

Figure 3 shows a graphical representation of the accumulated UEQ scale for each variable related to the Maxim application.

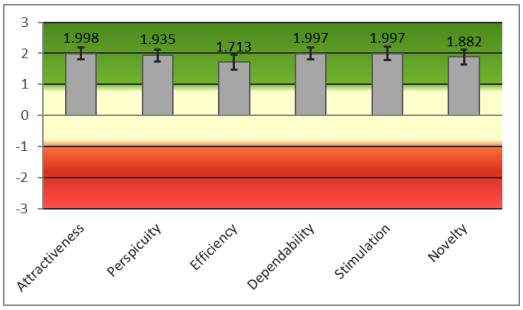


Figure 3. Graph of UEQ Scale for Each Application Variable in Maxim

Figure 4 shows that the UEQ scale value for the Maxim application, when analyzed by Pragmatic and Hedonic Quality categories, is above +1. This result indicates that the user gave a positive evaluation of the Maxim application [12].

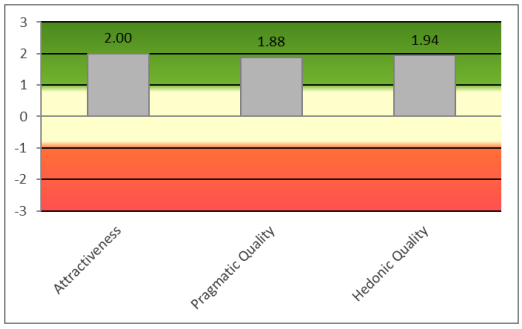


Figure 4. Graph based on UEQ scale grouping Maxim App

InDrive App UX Value Analysis

Each UEQ component in the inDrive application is recorded to have a score exceeding +1, as illustrated in Figure 5. In addition, the totalization of UEQ scores for each variable on the inDrive application is also presented in Figure 5.

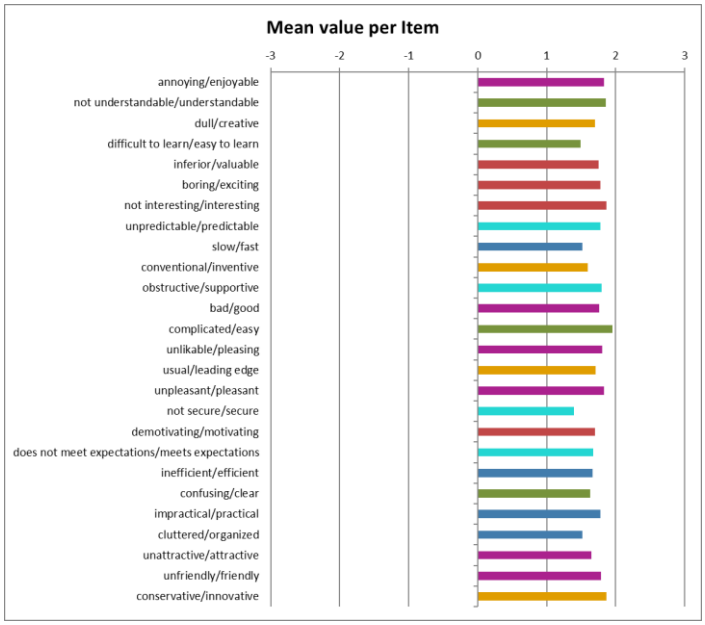


Figure 5. UEQ Scale Each inDrive Application Item

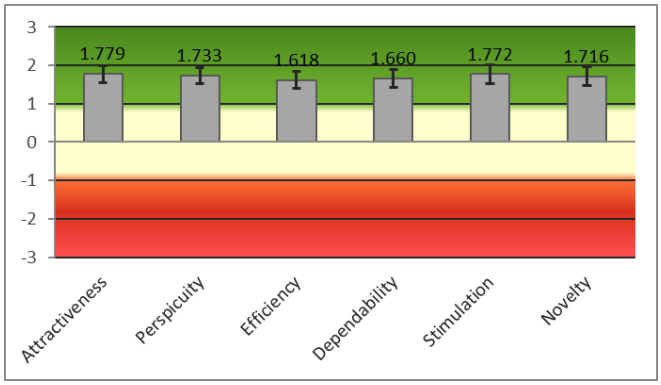


Figure 6. UEQ Scale Each inDrive Application Variable

Figure 6 and Figure 7 show that inDrive app scores in pragmatic quality and hedonic quality categories have values greater than +1. This indicates that users give theinDrive app a positive rating.

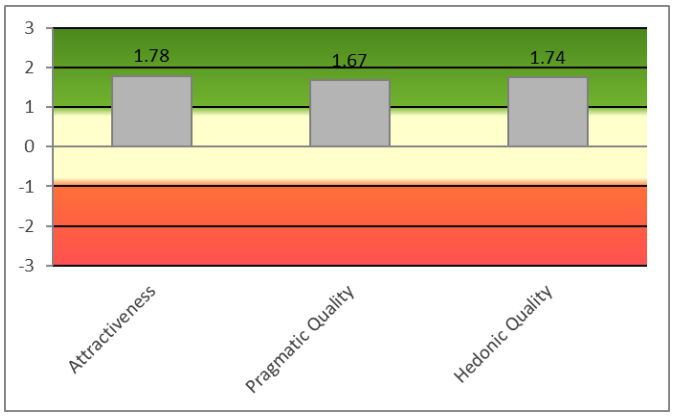


Figure 7. Graph by inDrive Application UEQ Scale Grouping

T-Test Analysis Results

Table 3. The UEQ scale is based on the grouping of applications

SCALE	MEAN		Significant Result	
	Maxim	inDrive		
Attractiveness	2	1.78	0.14	No Significant Difference
Perspicuity	1.94	1.73	0.17	No Significant Difference
Efficiency	1.71	1.62	0.55	No Significant Difference
Dependability	2	1.66	0.03	Significant Difference
Stimulation	2	1.77	0.18	No Significant Difference
Novelty	1.88	1.72	0.34	No Significant Difference

The table above concludes that the Maxim application performs better than the inDrive application. This can be noticed through the mean value of the UEQ scale, which is significantly higher for all variables tested. Thus, it can be concluded that Maxim as a whole performed better than inDrive in the test.

Discussion

Table 4 and Table 5 display benchmark values for Maxim and inDrive applications. Graphics are presented in Figure 8 and Figure 9.

Table 4. UEQ Scale Benchmark Maxim App

Scale	Mean	Comparison to benchmark	Interpretation
Attractiveness	2,00	Excellent	In the range of the 10% best results
Perspicuity	1,94	Good	10% of results better, 75% of results worse
Efficiency	1,71	Good	10% of results better, 75% of results worse
Dependability	2,00	Excellent	In the range of the 10% best results
Stimulation	2,00	Excellent	In the range of the 10% best results
Novelty	1,88	Excellent	In the range of the 10% best results

Figure 8. UEQ Scale Benchmark Graph Maxim App

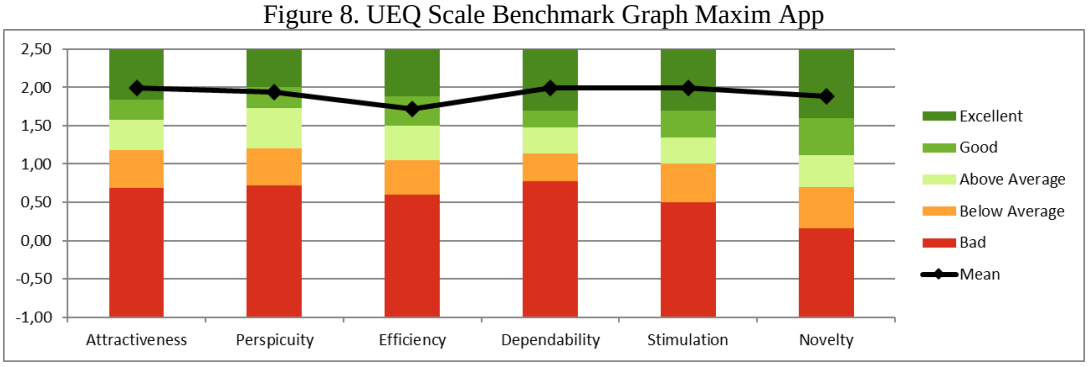
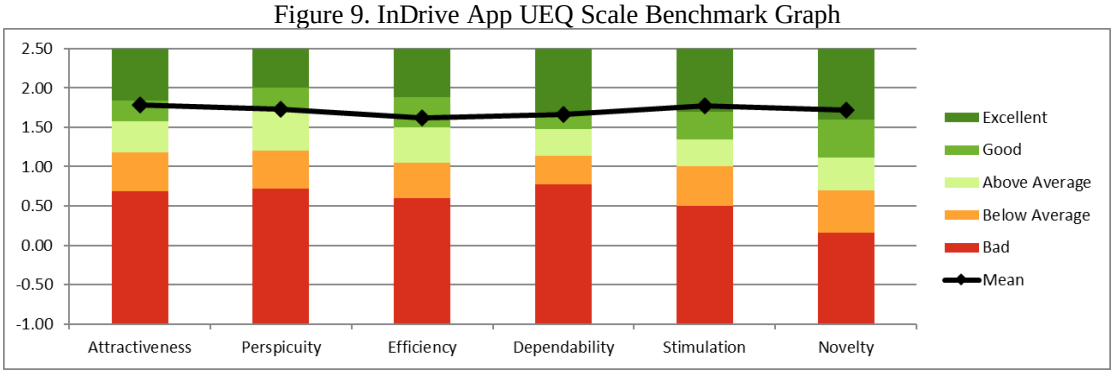


Table 5. UEQ Scale Benchmark InDrive App

Scale	Mean	Comparison to benchmark	Interpretation
Attractiveness	1.78	Good	10% of results better, 75% of results worse
Perspicuity	1.73	Good	10% of results better, 75% of results worse
Efficiency	1.62	Good	10% of results better, 75% of results worse
Dependability	1.66	Good	10% of results better, 75% of results worse
Stimulation	1.77	Excellent	In the range of the 10% best results
Novelty	1.72	Excellent	In the range of the 10% best results

Figure 9. InDrive App UEQ Scale Benchmark Graph



A breakdown of user experience variables for both applications, based on the information presented in Table 4, Figure 8, Table 5, and Figure 9.

1. Attractiveness of Maxim and inDrive applications: Users consider the attractiveness of Maxim applications to be "excellent," while for inDrive they are

considered "good". This shows that both applications have managed to create a positive and attractive impression for users, which indicates the high quality of the product in this aspect of appeal.

2. Perspicuity on Maxim and inDrive apps: Users rate the perspicuity score for both apps as “good.” This indicates that the level of clarity and ease of use of the application is considered good. Factors that contribute to this clarity include the use of easy-to-understand language, an intuitive interface, and the availability of a helpful "User Guide" feature.
3. Efficiency of Maxim and inDrive applications: The perception of users about the 'good' efficiency of these two applications indicates their satisfaction with the transaction processing's agility and convenience that Maxim and inDrive applications offer.
4. Maxim and inDrive application dependability: The user experience of Maxim application dependability is rated "excellent," and for inDrive it is rated "good." This suggests that the product's accuracy and reliability are good, in aspects such as cost calculation accuracy and accurate location. Issues such as discrepancies in delivery locations can be addressed with folder updates, while issues of mismatches in order status or operating hours can be addressed through refreshing information provided by business owners.
5. Maxim and inDrive application stimulation: The stimulation value felt by users from both applications is "excellent." This means that the application has succeeded in providing a pleasant experience and motivates users to continue using the application for transactions.
6. Novelty of Maxim and inDrive apps: Users perceive the novelty of both applications as "excellent." This indicates that the applications offer inventive and imaginative designs, successfully drawing user interest.

CONCLUSION

The findings of this study are summarized as follows:

1. A positive evaluation was given to the Maxim user experience across all aspects, with highest scores in attractiveness, Dependability and Stimulation. On the other hand, the lowest scores were given to the coefficient of efficiency.
2. Similarly, positive evaluation was given to the Maxim user experience across all dimensions, noting the greatest score in Attractiveness and the smallest in Efficiency.
3. A t-test analysis comparing the user experiences of the Maxim and inDrive applications revealed no significant differences across all the variables examined.
4. Nevertheless, the overall user experience score for the Maxim app was higher than that for the inDrive app across all tested variables.
5. It was identified that the Efficiency variable in both the Maxim and inDrive applications necessitates special attention to improve service quality and ensure the integrity of references.

Several recommendations for future research have been outlined. Firstly, future studies are encouraged to integrate the UEQ method with other measurement methods. This integration is anticipated to yield more comprehensive and precise assessments, facilitating the efficient identification of areas needing improvement. Additionally, for data collection via online questionnaires, it is advisable to include further explanations for each questionnaire item and more detailed instructions for completion. This approach is

intended to mitigate potential challenges respondents may encounter in comprehending the questions and completing the questionnaire, enhancing participation and the quality of responses. Lastly, in the context of app development research, it is critical to assess the app's technical functionality before testing the user experience with several respondents. This ensures that the application functions flawlessly from a technical standpoint and receives positive feedback from users. By implementing these recommendations, future research is expected to significantly advance the understanding and enhancement of user experience across various applications and technological domains while maintaining the integrity of references.

REFERENCES

[1] R. Padhilah, M. R. S. P. Pamungkas, S. Husniyah, N. R. Listarto, A. N. Aeni, and R. Marwati, "Evaluasi User Experience Dalam Aspek Usability Pada Aplikasi Android Edukasi Literasi Matematika," *J. KomtekInfo*, vol. 9, pp. 119–124, 2022, doi: 10.35134/komtekinfo.v9i4.316.

[2] A. Mutia, "Survei: Publik Jabodetabek Paling Sering Pakai Gojek, Bagaimana Grab, Maxim, dan InDriver," 2022. [Online], Available:https://databoks.katadata.co.id/datapublish/2022/10/11/survei-publik-jabodetabek-paling-sering-pakai-gojek-bagaimana-grab-maxim-dan-indriver [accessed Mar. 15, 2024].

[3] L. Mulyadi, I. Fitrianti, and A. A. Ridha, "Analisis User Experience Aplikasi Ojek Online Maxim Dengan Model Hci," *Dinamik*, vol. 28, no. 2, pp. 79–84, 2023, doi: 10.35315/dinamik.v28i2.9368.

[4] H. Setiawan and D. Novita, "Analisis Kepuasan Pengguna Aplikasi KAI Access Sebagai Media Pemesanan Tiket Kereta Api Menggunakan Metode EUCS," *J. Teknol. Sist. Inf.*, vol. 2, no. 2, pp. 162–175, 2021, doi: 10.35957/jtsi.v2i2.1375.

[5] H. Elmunsyah, W. N. Hidayat, H. Suswanto, K. Asfani, N. H. Muflihah, and Kusumadyahdewi, "UX Validation of Village Administration Information System Using User Experience Questionnaire (UEQ) and Usability Testing," *Proc. - 4th Int. Conf. Vocat. Educ. Electr. Eng. Strength. Engagem. with Communities through Artif. Intell. Appl. Educ. Electr. Eng. Inf. Technol. ICVEE 202*, 2021, doi: 10.1109/ICVEE54186.2021.9649749.

[6] S. C. Utama, and D. Pibriana, "Analisis Kualitas Pengalaman Pengguna Aplikasi Absensi Pada Pt.Sarana Gastekindo Utama Prabumulih Menggunakan Metode User Experience Questionnaire (Ueq)," *COMSERVA J. Penelit. dan Pengabdi. Masy.*, vol. 3, no. 06, pp. 2124–2138, 2023, doi: 10.59141/comserva.v3i06.1010.

[7] A. Ananda, B. S. Prakoso, and A. D. Herlambang, "… Pengalaman Pengguna pada Aplikasi Virtual Hotel Operator di Kota Malang menggunakan User Experience Questionnaire (UEQ) dan Importance …," *J. Pengemb. Teknol. …*, vol. 5, no. 12, 2021, [Online]. Available: http://j-ptiik.ub.ac.id/index.php/j-ptiik/article/download/10316/4598.

[8] I. N. T. A. Putra, and F. H. S. Ramadhani, "Analisa Website Sistem Akademik Institut Bisnis Dan Teknologi Menggunakan Metode Ueq (User Experience Questionnaire)," *J. Satya Inform.*, vol. 8, no. 01, pp. 95–103, 2023, doi: 10.59134/jsk.v8i01.243.

[9] M. A. Kushendriawan, H. B. Santoso, P. O. H. Putra, and M. Schrepp, "Evaluating User Experience of a Mobile Health Application 'Halodoc'using User Experience Questionnaire and Usability Testing," *J. Sist. Inf.*, vol. 17, no. 1, pp. 58–71, 2021.

[10] A. S. E. Lakshmi and E. Sudaryanto, "Analisis Dampak Tayangan Kartun Televisi Pada Perkembangan Bahasa Anak Di Masa Pandemi (Studi Deskriptif Komparatif Pada Tk Srikandi Surabaya)," vol. 02, no. 03, pp. 1–23, 2016.

[11] D. S. Fitriansyah and R. Riwinoto, "Analisis User Experience Web halal Batam Di Pusat Kajian Halal Politeknik Negeri Batam Menggunakan User Experience," *J. Appl. Multimed. Netw.*, vol. 5, no. 2, pp. 67–76, 2021, doi: 10.30871/jamn.v5i2.3768.

[12] D. Khuntari, "Analisis Pengalaman Pengguna Aplikasi Gojek dDiana Khuntari. (2022). Analisis Pengalaman Pengguna Aplikasi Gojek dan Grab dengan Pendekatan User Experience Questionnaire. Jurnal Teknik Informatika Dan Sistem Informasi, 8(April), 275–286.an Grab dengan Pen," *J. Tek. Inform. dan Sist. Inf.*, vol. 8, no. April, pp. 275–286, 2022.

[13] A. Intelegence, "Uji T-Test."[Online]. Available: https://informatika.uc.ac.id/2022/12/uji-t-test/ [accessed Mar. 21, 2024].

[14] M. Schrepp, "User Experience Questionnaire Handbook v10(03.05.2023)," pp. 1–16, 2023, [Online]. Available: www.ueq-online.org.

[15] M. Schrepp and J. Thomaschewski, “Design and Validation of a Framework for the Creation of User Experience Questionnaires,” *Int. J. Interact. Multimed. Artif. Intell.*, vol. 5, no. 7, pp. 88–95, 2019, doi: 10.9781/ijimai.2019.06.006.

[16] M. N. Oktanuryansyah, and A. Syarief, “EVALUASI PENGALAMAN PEMBELAJARAN DARING BERBASIS PRAKTIKUM DENGAN KUALITAS HASIL BELAJAR MAHASISWA MENGGUNAKAN UEQ SCALES,” vol. 2, no. 8, 2021.