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Evaluating the user experience of online transportation applications with the UEQ approach to people's lifestyles

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ABSTRACT

This study was conducted to evaluate the user experience of online transportation applications using a user experience questionnaire aimed at the society lifestyle. The study makes reference to the following user evaluations: novelty, attractiveness, clarity, efficiency, and stimulation. This kind of study is known as quantitative research, and it looks at the issue of user experience in relation to society's lifestyle. data gathering through the distribution of questionnaires. Tables and graphs are used to display the descriptive analysis and presentation of the data. The lifestyle variable was positively and significantly impacted by the user experience variable, according to the results. As a result, the proprietor of the online transportation program has the ability to modify its features.

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1. INTRODUCTION

Online transport has become an essential component of people's lives. Traveling is quick and easy with online ride-hailing apps. However, depending on their choices and lifestyles, customers' experiences with ride-hailing apps may differ. To understand the tastes and lifestyles of current ride-hailing app users, it is imperative to analyze the user experience of these programs using the user experience questionnaire approach technique. Ride-hailing app developers can use this evaluation to improve customer satisfaction and service quality. One of the lifestyles of people is to value time and want everything to be fast and practical. With this online transportation application, it is very easy for people to order vehicles practically, easily, and quickly.

In Indonesia, gojek is one of the most popular applications for internet transport. According to (Abdillah & Hidayat, 2019), the app is cloud-based and provides a myriad of services for users. The word "unicorn" refers to startups valued at more than $1 billion in the United States, according to Aileen Lee, founder of startup finance company Cowboy Ventures. The top "ride-hailing" company in Indonesia is Gojek, followed by financial technology (FinTech) companies, travel sites "Traveloka," "Tokopedia," and "Bukalapak." In 2017, Gojek emerged as the winner as the Fintech company that provided the most proactive support for the National Non-Cash Movement. Gojek is one of Indonesia's largest internet service providers. It was acquired as Indonesia's first "Unicorn" company in August 2016 and is run by "transformational leader" Nadiem Makarim (Junita, 2019). Gojek became a "Decacorn" in 2019, a term that refers to start-up companies valued at more than $10 billion.

Grab, an online transportation service originating from Singapore, utilises electronic systems through smartphones as its main means of use. In 2016, the app experienced rapid growth in Southeast Asia, particularly in Indonesia (Syahputra, 2019 in (Clarisa et al., 2022). Grab

provides a variety of services, including shuttle services, goods delivery, food delivery, and other services.

With its presence in 137 cities in Indonesia, including Palembang, Grab not only provides transport solutions but also expands its service scope to courier, food delivery, payment, and hotel room booking. Although Grab only provides applications, the vehicles used are owned by partners who have joined PT Grab Indonesia (Wicaksono & Chandra, 2020).

The presence of online motorcycle taxis, such as Grab and Gojek, helps Indonesians in obtaining safe means of transport and is an effective solution when congestion occurs. Since its launch in Indonesia in June 2012, Grab has provided a variety of transport options, ranging from taxis to bicycle transportation (Fahrurrozi et al., 2020 in (Clarisa et al., 2022). The Grab app has been downloaded by more than 10 million users.

However, some shortcomings are still faced by this application, including unclear usage procedures for new users and lack of accuracy on the map when determining location. This causes users to often have to enter the location repeatedly (Murti, 2020 in (Clarisa et al., 2022)). Developments and improvements continue to be made to improve the quality and usability of the Grab application in the future.

User Experience Questionnaire (UEQ) is a method that is useful in collecting respondents' responses regarding user experience. This method uses six rating scales, namely attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty, which consists of 26 question components. The results of using the UEQ method allow the author to make estimates regarding areas that require high improvement. (Nugroho et al., 2022)

The UEQ questionnaire, which was available in more than 30 languages during the course of this study, had its original German version in 2005 (Schrepp et al., 2023). The data analysis approach used aims to ensure the practical relevance of the scales constructed, where the scales are derived from data on a larger set of items. Each scale in the UEQ describes a different quality for each aspect of the interactive product, allowing the authors to make more targeted improvements (Nurdin et al., 2020).

In the context of using UEQ, this questionnaire presents more than 20 languages and serves as a template for measuring User Experience of interactive products. The scale of the questionnaire covers usability aspects such as efficiency, perspicuity, and dependability, as well as user experience aspects such as originality and stimulation. Thus, UEQ helps provide a comprehensive picture of the user experience of interactive products (Schrepp, 2019 in Nurdin et al., 2020).

2. RESEARCH METHOD

In its implementation, this research uses Google Form to distribute questionnaires to respondents. As shown in the flowchart, a pre-conceived research flow will be utilised before the data can be used in this study.

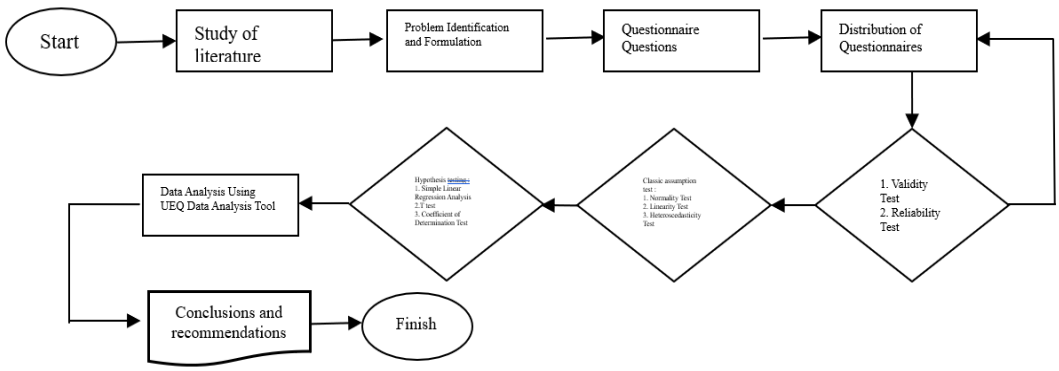


Figure 1. Flowchart

Three main aspects comprise the User Experience Questionnaire (UEQ) measurement method: Attractiveness, Pragmatic Quality, and Hedonic Quality. Pragmatic quality indicates how users perceive an object as technical (task-oriented), while hedonic quality indicates how users

perceive an object as non-technical (task-oriented) (Schrepp et al., 2017). The 26 questions in the questionnaire are divided into six measurement scales: attractiveness, perspective, efficiency, dependability, stimulation, and novelty. The UEQ handbook was created and simply adapted to the language version used. This study used the Bahasa Indonesia version of the UEQ questionnaire, which was translated by Harry B. Santoso.

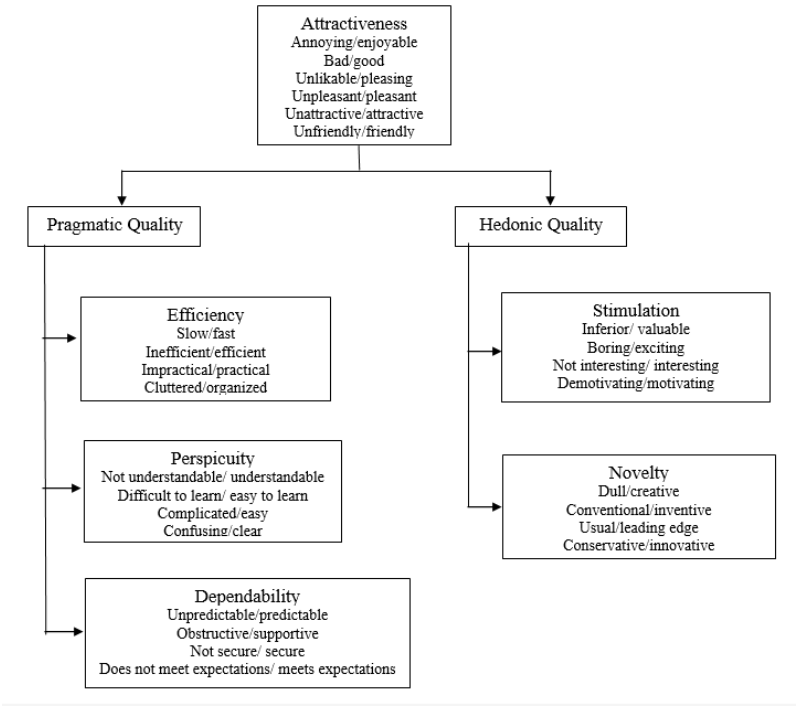


Figure 2. Question instrument

The figure below shows the statement instrument, its arrangement, and the chosen scale

	1	2	3	4	5	6	7		
Menyusahkan	○	○	○	○	○	○	○	Menyenangkan	1
Tak dapat dipahami	○	○	○	○	○	○	○	Dapat dipahami	2
Kreatif	○	○	○	○	○	○	○	Monoton	3
Mudah dipelajari	○	○	○	○	○	○	○	Sulit dipelajari	4
Bermanfaat	○	○	○	○	○	○	○	Kurang bermanfaat	5
Membosankan	○	○	○	○	○	○	○	Mengasyikkan	6
Tidak menarik	○	○	○	○	○	○	○	Menarik	7
Tak dapat diprediksi	○	○	○	○	○	○	○	Dapat diprediksi	8
Cepat	○	○	○	○	○	○	○	Lambat	9
Berdaya cipta	○	○	○	○	○	○	○	Konvensional	10
Menghalangi	○	○	○	○	○	○	○	Mendukung	11
Baik	○	○	○	○	○	○	○	Buruk	12
Rumit	○	○	○	○	○	○	○	Sederhana	13
Tidak disukai	○	○	○	○	○	○	○	Menggembirakan	14
Lazim	○	○	○	○	○	○	○	Terdepan	15
Tidak nyaman	○	○	○	○	○	○	○	Nyaman	16
Aman	○	○	○	○	○	○	○	Tidak aman	17
Memotivasi	○	○	○	○	○	○	○	Tidak memotivasi	18
Memenuhi ekspektasi	○	○	○	○	○	○	○	Tidak memenuhi ekspektasi	19
Tidak efisien	○	○	○	○	○	○	○	Efisien	20
Jelas	○	○	○	○	○	○	○	Membingungkan	21
Tidak praktis	○	○	○	○	○	○	○	Praktis	22
Terorganisasi	○	○	○	○	○	○	○	Berantakan	23
Atraktif	○	○	○	○	○	○	○	Tidak atraktif	24
Ramah pengguna	○	○	○	○	○	○	○	Tidak ramah pengguna	25
Konservatif	○	○	○	○	○	○	○	Inovatif	26

Figure 3. Instrument statement

3. RESULTS AND DISCUSSIONS

After completing the data reliability test, the next step is to conduct data analysis with the UEQ data analysis tool. The results are shown in the form of average values for each component and scale used by the UEQ technique.

Each group of question items gave good results, according to the findings of the analysis after calculation. Approximately neutral judgements on the corresponding scales are indicated by values ranging from -0.8 to 0.8, positive judgements are indicated by values >0.8, and negative evaluations are indicated by values <-0.8. The scale range is +3 (very good) to -3 (very bad).

The "Efficiency" category received the highest score, while the "Novelty" category received the lowest score.

UEQ Scales application X

UEQ Scales (Mean and Variance)		
Daya tarik	1.741	1.16
Kejelasan	1.880	0.75
Efisiensi	2.000	0.44
Ketepatan	1.602	0.36
Stimulasi	1.269	0.85
Kebaruan	0.880	1.02

UEQ Scales application Y

UEQ Scales (Mean and Variance)		
Daya tarik	1.809	1.18
Kejelasan	1.796	1.18
Efisiensi	1.861	0.93
Ketepatan	1.231	0.94
Stimulasi	1.509	1.23
Kebaruan	1.185	1.33

Figure 4. UEQ scales (mean and variance)

In the "Attractiveness" category, Application X scored 1,741, while Application Y scored 1,809, both of which are within the desired range of assessment scores, which range from 0.8 to a maximum of 3. This indicates that participants believe that the implementation of Transport X and Y is attractive. In this area, App Y obtained the highest level of attractiveness.

While App Y received a score of 1.861, the "Efficiency" category of App X received a score of 2.000, meaning that the efficiency category of the Transport app was well evaluated. Thus, respondents do not need to make extra efforts to do their work. App X achieved maximum efficiency in this category.

The "accuracy" category scored 1.602, while App Y falls into the good evaluation region with a score of 1.231. This gives users the impression that they are in charge of the interaction as the Transport app does not travel to the wrong location when using its buttons. App X scored the highest accuracy in this category.

In the favourable reviews section, Y App scored 1.509, while the "Stimulation" category scored 1.269. This shows that people were inspired to use the Transport app. The Y App scored the highest for Stimulation in this category.

The "Novelty" category received a score of 0.880, but App Y had a favourable score of 1.185. This result is in the range from -0.8 to 0.8, which is the neutral scoring zone, and thus slightly above it. The result of the "Novelty" category is the lowest of all the other categories, indicating that Transport apps X and Y still require improvement in terms of innovation.

Benchmark Results

To be able to gain a more accurate understanding of product quality by comparing the assessed user experience with results from other well-known products. With information from 163 product evaluations that UEQ conducted (among 4818 participants in all evaluations), UEQ provides baseline data (Schrepp et al., 2015).

According to a scale, the Benchmark divides items into five categories: 1) Outstanding: Being in the tenth percentile of the largest results, 2) Good: 10% higher and 75% lower in the benchmark data set, 3) Above Average: 50% of the results are below the assessed product results, while 25% of the benchmark results are better. 4) Below Average: 50% of the benchmark results are better than the evaluated product, while 25% of the benchmark results are worse. and 5) Poor: Represents 25% to 25% of the lowest performing results.

Online transport includes benchmark results based on the study findings, which are shown in the following table:

Benchmark results of ride-hailing apps X

Scale	Mean	Comparisson to benchmark	Interpretation
Daya tarik	1.74	Good	10% of results better, 75% of results worse
Kejelasan	1.88	Good	10% of results better, 75% of results worse
Efisiensi	2.00	Excellent	In the range of the 10% best results
Ketepatan	1.60	Good	10% of results better, 75% of results worse
Stimulasi	1.27	Above Average	25% of results better, 50% of results worse
Kebaruan	0.88	Above Average	25% of results better, 50% of results worse

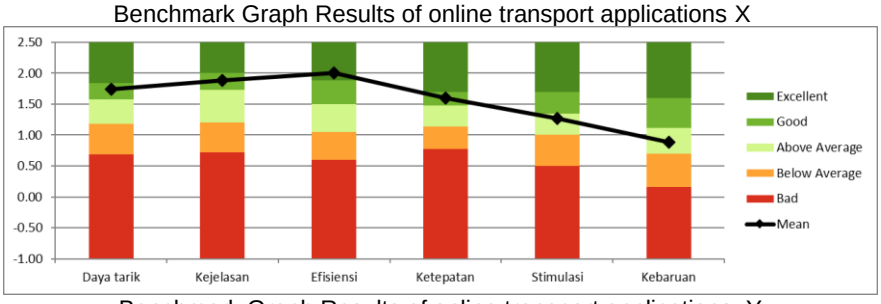
Benchmark results of ride-hailing apps Y

Scale	Mean	Comparisson to benchmark	Interpretation
Daya tarik	1.81	Good	10% of results better, 75% of results worse
Kejelasan	1.80	Good	10% of results better, 75% of results worse
Efisiensi	1.86	Good	10% of results better, 75% of results worse
Ketepatan	1.23	Above Average	25% of results better, 50% of results worse
Stimulasi	1.51	Good	10% of results better, 75% of results worse
Kebaruan	1.19	Good	10% of results better, 75% of results worse

Figure 5. Benchmark results of online transport applications

Three (3) aspects of X's ride-hailing app - attractiveness, clarity, and accuracy - fall under the "Good" category. Y's ride-hailing app was rated "Good" in five (5) categories: 1) Visual appeal; 2) Clarity; 3) Efficacy; 4) Stimulation; and 5) Originality.

Benchmark Graph Results of online transport applications X



Benchmark Graph Results of online transport applications Y

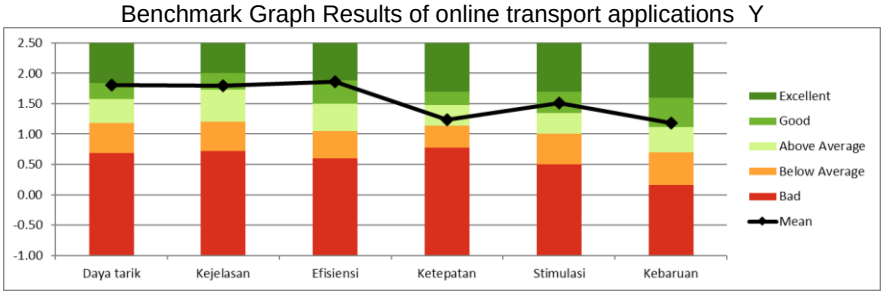


Figure 6. Graph of Benchmark Results of online transport applications

In addition, there are 2 (two) categories in programme X that are classified as "Above Average", namely: 1) Stimulation, and 2) Novelty. However, Application Y of Application X has 1 (one) category, namely accuracy, which is in the "Above Average" range

4. CONCLUSION

Based on the research conducted with the UEQ test, it can be concluded: 1). Each user experience variable in programme X has a positive value, the Efficiency variable has the greatest value, while the Novelty variable has the lowest value, 2). Each user experience variable on application Y has a positive value, with the novelty variable having the lowest value and the efficiency variable having the greatest value, 3). There were no significant differences for any of the variables according to the findings of the t-tests conducted on the user experience of apps X and Y, 4). In terms of accuracy, efficiency, and clarity, app X offers a better user experience than app Y. On the attractiveness, stimulation, and novelty factors, app Y outperforms app X in terms of user experience. As for the following suggestions, some respondents find it difficult to understand the statements submitted and fill out the questionnaire, it is necessary to add information to the questionnaire items and provide clearer filling instructions for data collection through online questionnaires.

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