



Comparison Analysis of User Experience on m-BCA and BRImo Mobile Banking Applications Using The User Experience Questionnaire (UEQ) Method

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ABSTRACT

The increasing trend of non-cash payments such as QRIS and transfers is driving more intensive use of mobile banking applications in daily life. This poses a challenge for mobile banking service providers to deliver the best service to their customers through a good user experience. This is necessary to maintain their existence in the hearts of their customers.

This research aims to determine the user experience value in each m-BCA and BRImo application, as well as their comparative value using the User Experience Questionnaire (UEQ) method. The analysis results conducted on 240 respondents with a minimum age of 19 and domiciled in Jabodetabek show that the user experience of BRImo is superior to m-BCA in all UEQ scales. BRImo achieves excellent benchmark scores in the attractive, perspicuity, efficiency, dependability, and stimulation scales while obtaining a good evaluation in the novelty scale. Meanwhile, m-BCA obtains excellent benchmark scores in the perspicuity, efficiency, and dependability scales, good evaluation on the attractive scale, above average on the stimulation scale, and below average on the novelty scale.

1. INTRODUCTION

The banking sector has evolved with technological advancements, transitioning from local-centric to equipment-centric services like mobile banking, accessible anytime, anywhere (Sakala & Phiri, 2019). Digital technology adoption has streamlined financial transactions, enhancing customer experience and reducing banking costs (Sakala & Phiri, 2019). Bank Indonesia's National Non-Cash Movement (GNNT-Gerakan Nasional Non Tunai) since August 14, 2014, aims to create a secure, efficient payment system, fostering a Less Cash Society (Valeria, 2020). Government initiatives, including non-cash toll payments since 2017, align with the Go Digital 2020 Vision, accelerating Indonesia's digital economy growth (Valeria, 2020). The transition to non-cash transactions is evident in the rapid rise of electronic money, reaching IDR 399.6 trillion in 2022, a 30.84% increase from 2021 (Nurhanisah, 2023). Bank Indonesia's QRIS payment system integration aims to simplify and secure transactions using QR Codes, driving Indonesians to utilize mobile banking for its convenience (Bank Indonesia, n.d).

Mobile banking allows users to conduct various transactions conveniently, quickly, and securely via smartphone (Mostafa, 2020). It's considered the most cost-effective banking service, offering services like balance checks, bill payments, and money transfers with ease, creating a competitive edge (Mostafa, 2020; Shankar et al, 2020). Factors influencing its adoption include information quality perception, personal innovation, and resource availability (Rahmi & Handayani, 2023). The most popular mobile banking apps in Indonesia are m-BCA from BCA, used by 60%, and BRImo from BRI, used by 26% (Angelia, 2022). m-BCA is provided by BCA, holding the highest market capitalization in Indonesia and BRImo is provided by BRI, the second-largest market capitalization holder (Winarni, 2023).

Reasons for Indonesians using mobile banking include its hassle-free nature, time efficiency, ease of use, and convenience. Reviews on app stores reveal user dissatisfaction with m-BCA and BRImo's system quality and services. For m-BCA, dissatisfaction is with the interface, services, and overall experience, while

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for BRImo, it's focused on service quality despite a good interface. As popular mobile banking providers, they must prioritize user experience.

User Experience (UX), defined by ISO 9241-210 (2009), reflects users' perceptions and responses to a product, system, or service, aiming to provide pleasure and satisfaction. Evaluating UX, quantitatively and qualitatively, is crucial for banks offering mobile banking, aiding in identifying areas for improvement and enhancing user satisfaction. The User Experience Questionnaire (UEQ) is a commonly used quantitative method for this analysis, providing efficient insights into the most critical aspects of UX. According to Schrepp (2023), the User Experience Questionnaire (UEQ) is a tool used to evaluate user experience with products, systems, and services. Developed in 2005, it measures six main variables: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty. UEQ provides comprehensive insights into application design, enabling companies to enhance user experience. It enables comparisons of UX quality, measures design effectiveness, and enhances customer satisfaction. Overall, UEQ provides efficient insights for optimizing product or service UX designs and maximizing investment effectiveness.

The shift to mobile banking underscores the importance of user satisfaction. User experience design plays a vital role in sustaining and developing mobile banking applications. In mobile banking, UX encompasses users' overall interactions and perceptions, greatly influenced by ease of use. Dissatisfaction may arise from issues like recent updates and technical constraints. (Wisesa, 2021; Che et al, 2023; Alhejji et al, 2022)

This study utilizes UEQ analysis to assess UX in m-BCA and BRImo mobile banking apps, aiming to pinpoint strengths and areas for enhancement. It serves as an evaluation tool for service providers to maintain their position as top mobile banking services in Indonesia.

2. METHODS

This research utilizes the User Experience Questionnaire method, which is a quantitative research method. The population used consists of users of the m-BCA or BRImo mobile banking applications. The determination of the research sample uses a non-probability sampling technique with a purposive sampling approach. The choice of a non-probability sampling technique with a purposive sampling approach in this research was to ensure that the data collected was relevant, efficient and of high quality, in accordance with the research objective of understanding the user experience of the m-BCA and BRImo mobile banking applications. In this way, researchers can ensure that the selected respondents actually have relevant experience and can provide useful information for analysis. Based on Cochran's calculation, a minimum of 100 respondents is required for each mobile banking application, totaling a minimum of 200 respondents. The criteria for respondents in this study are users of the m-BCA or BRImo mobile banking applications who, in approximately the last 6 months, are at least 19 years old and reside in the Jabodetabek area. Questionnaires were collected through Google Forms with a total of 240 respondents who completed the questionnaire. 120 respondents were using m-BCA and 120 respondents using BRImo.

3. RESULTS AND DISCUSSIONS

The results on each analysis UEQ scale for the m-BCA application service yielded positive evaluation results in five out of six scales, namely attractiveness, perspicuity, efficiency, dependability, and stimulation. The perspicuity scale received the highest mean value. This indicates that perspicuity is a strength of the m-BCA service, and suggests that users generally agree that it is easy to learn and understand the application for usage. Meanwhile, the lowest UEQ scale result was found in the novelty scale, which received a neutral evaluation. This suggests that users generally agree that the m-BCA is less innovative and creative. The benchmark results for m-BCA show an excellent rating in clarity, efficiency, and accuracy, indicating superior quality compared to benchmark products. Users find the app easy to use, providing good control and efficiency. The app also receives a good rating for attractiveness, offering a comfortable and friendly experience. While stimulation is above average, improvements are needed for continued success. Novelty receives a below-average rating, suggesting the app lacks innovation and creativity and requires significant improvement.

UEQ Scales (Mean and Variance)		
Daya tarik	↑ 1.794	0.74
Kejelasan	↑ 2.172	0.89
Efisiensi	↑ 1.958	0.90
Ketepatan	↑ 1.718	0.89
Stimulasi	↑ 1.154	1.50
Kebaruan	→ 0.179	2.25

Figure 1. m-BCA UEQ Scales Result

Table 1. m-BCA UEQ Scales Benchmark Result

Scale	Mean	Comparison to benchmark	Interpretation
Attractiveness	1,79	Good	10% of results better, 75% of results worse
Perspicuity	2,17	Excellent	In the range of the 10% best results
Efficiency	1,96	Excellent	In the range of the 10% best results
Dependability	1,72	Excellent	In the range of the 10% best results
Stimulation	1,15	Above Average	25% of results better, 50% of results worse
Novelty	0,18	Below Average	50% of results better, 25% of results worse

The results on each analysis UEQ scale for the BRImo application service yielded positive evaluation results in all UEQ scales, namely attractiveness, clarity, efficiency, accuracy, stimulation, and novelty. The attractiveness scale received the highest mean value. This illustrates that attractiveness is a strength of the BRImo application service, as users agree that BRImo has positive attractiveness, and overall, users enjoy the application service. Meanwhile, the lowest mean value was found in the novelty scale.

The benchmark results for each UEQ scale of the BRImo application received an excellent rating in the attractiveness, clarity, efficiency, accuracy, and stimulation scales. Furthermore, a good rating was given for the novelty scale. Five out of six UEQ scales for the BRImo application received an excellent rating. This indicates that overall, the BRImo application provides users with an excellent experience compared to the UEQ benchmark dataset, offering ease in learning the application and providing good control and efficiency in interacting with the application, resulting in a comfortable user experience.

UEQ Scales (Mean and Variance)		
Daya tarik	↑ 2.235	0.75
Kejelasan	↑ 2.220	0.96
Efisiensi	↑ 2.138	1.00
Ketepatan	↑ 1.905	0.91
Stimulasi	↑ 2.053	0.84
Kebaruan	↑ 1.505	1.23

Figure 2. BRImo UEQ Scales Result

Table 2. BRImoUEQ Scales Benchmark Result

Scale	Mean	Comparison to benchmark	Interpretation
Attractiveness	2,24	Excellent	In the range of the 10% best results
Perspicuity	2,22	Excellent	In the range of the 10% best results
Efficiency	2,14	Excellent	In the range of the 10% best results
Dependability	1,91	Excellent	In the range of the 10% best results
Stimulation	2,05	Excellent	In the range of the 10% best results
Novelty	1,51	Good	10% of results better, 75% of results worse

Based on the results comparing the UEQ scale means, BRImo outperforms m-BCA across all UEQ scales. BRImo has higher mean values in attractiveness (2.24 vs. 1.79), perspicuity (2.22 vs. 2.17), efficiency (2.14 vs. 1.96), dependability (1.91 vs. 1.72), and stimulation (2.05 vs. 1.15). Notably, BRImo excels on the novelty scale (1.51 vs. 0.18). This indicates that BRImo users have a better overall experience. Simple t-test analysis confirms significant differences in attractiveness, stimulation, and novelty scales between m-BCA and BRImo. However, no significant differences are found in perspicuity, efficiency, and dependability scales.

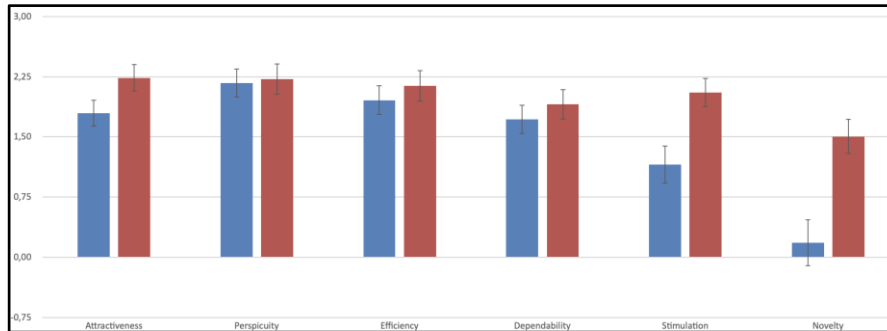


Figure 2. Graphic of Scale Means Compare Products m-BCA(blue) and BRImo(red)

4. CONCLUSION

Following the User Experience Questionnaire (UEQ) analysis and conclusions drawn from m-BCA and BRImo app users, here are some recommendations for mobile banking providers to consider for future service improvements. For mobile banking provider m-BCA, maintaining excellence in clarity, efficiency, and accuracy, as indicated by UEQ benchmarks, is paramount. However, improvements in attractiveness and stimulation are necessary, targeting low-rated indicators such as engagement and motivation. Enhancing novelty is also crucial, requiring updates for a fresher look and to remain competitive in Indonesia's mobile banking market. For BRImo service providers, maintaining excellence in attractiveness, clarity, efficiency, accuracy, and stimulation, as per UEQ benchmarks, is essential. While novelty is rated good, enhancements are needed to sustain leadership in Indonesia's mobile banking market. Improvements should focus on areas with the lowest indicator on the scale, such as creativity. Implementing benchmarking methods against competitors can help BRImo showcase its advantages and uniqueness, staying ahead of evolving trends. For future studies, exploring different locations and demographics is important to understand potential variations in findings. Research should consider respondents' backgrounds, such as education and occupation, to identify specific differences or similarities. Additionally, comparing users of both m-BCA and BRImo apps could offer valuable insights into their daily experiences and preferences.

5. REFERENCES

- Alhejji, S., Albeshar, A., Wahsheh, H., & Albarrak, A. (2022). Evaluating and Comparing the Usability of Mobile Banking Applications in Saudi Arabia. *Information*, 13(12), 559. <https://doi.org/10.3390/info13120559>
- Angelia, D. (2022, July 10). *Aplikasi Mobile Banking Paling Banyak Digunakan Masyarakat Indonesia 2022*. GoodStats. Retrieved October 27, 2023, from <https://goodstats.id/article/aplikasi-mobile-banking-paling-banyak-digunakan-masyarakat-indonesia-2022-Vb18i>
- Bank Indonesia. (n.d.). Elektronifikasi. <https://www.bi.go.id/id/fungsi-utama/sistem-pembayaran/ritel/elektronifikasi/default.aspx>
- Bank Indonesia. (n.d.). Kanal dan Layanan - QRIS. <https://www.bi.go.id/QRIS/default.aspx>
- Che, M., Say, S. Y., Yu, H., Zhou, Q., Shu, J., Sun, W., Luo, X., & Xu, H. (2023). Investigating customers' continuous trust towards mobile banking apps. *Humanities and Social Sciences Communications*, 10(1), 1-10. <https://doi.org/10.1057/s41599-023-02483-3>
- Mostafa, R. B. (2020). Mobile banking service quality: a new avenue for customer value co-creation. *International Journal of Bank Marketing*, Vol.38 No.5 (1107-1132). <https://doi.org/10.1108/IJBM-11-2019-0421>
- Nurhanisah, Y. (2020). *Orang Indonesia Makin Cashless*. Indonesia.baik.id. Retrieved February 19, 2024, from <https://indonesiabaik.id/infografis/orang-indonesia-makin-cashless>

- Rahmi, R. A., & Handayani, P. W. (2023). The influence of users' perspective factors on mobile banking adoption in Indonesia. *Journal of Science and Technology Policy Management*. <https://doi.org/10.1108/JSTPM-01-2022-0008>
- Sakala, L., & Phiri, J. (2019) Factors Affecting Adoption and Use of Mobile Banking Services in Zambia Based on TAM Model. *Open Journal of Business and Management*, 7, 1380-1394. <https://doi.org/10.4236/ojbm.2019.73095>.
- Schrepp, M. (2023). User Experience Questionnaire Handbook. *ueq-online.org*. <https://www.ueq-online.org/>
- Shankar, A., Jebarajakirthy, C., & Ashaduzzaman, M. (2020). How do electronic word of mouth practices contribute to mobile banking adoption? *Journal of Retailing and Consumer Services*, 52(101920). <https://www.sciencedirect.com/science/article/pii/S0969698918307045>
- Valeria, F. (2020). Studi Kasus - "Cashless Society" di Indonesia: Risiko dan Tantangan. *Center for Digital Society*, 65. <https://digitalsociety.id/2021/02/03/65-cfds-case-study-the-risk-of-embodiment-cashless-society/5006/>
- Winarni. (2023, October 2). Saham dengan Market Cap Terbesar di BEI per September 2023. *DataIndonesia.id*. Retrieved January 3, 2024, from <https://dataindonesia.id/pasar-saham/detail/8-saham-dengan-market-cap-terbesar-di-bei-per-september-2023>
- Wisera, N. R. (2021). User Interface Dan User Experience Untuk Mengelola Kepuasan Pelanggan. *Jurnal Sosial Humaniora Terapan*, 3(2). <https://scholarhub.ui.ac.id/cgi/viewcontent.cgi?article=1071&context=jsht>