MOBILE JKN USER EXPERIENCE AND QUALITY IN KARANGTALUN USING HEART FRAMEWORK AND MARS

Nurwiyati Prihandari[1], Yayak Kartika Sari[2], Joko Iskandar[3]
Infomatics, Faculty of Science and Technology, Bhinneka PGRI University
Jl. Mayor Sujadi Timur Number 7 Tulungagung, East Java Indonesia
E-mail: prihandarii2983@gmail.com[1], yayakkartikasari93132042@gmail.com[2], arsip.indoscript@gmail.com[3]

Abstract *- Digital transformation through the Mobile JKN application aims to improve the efficiency of BPJS Kesehatan services. However, users in Karangtalun Village still face various technical obstacles and interface complexity. This study aims to evaluate the user experience and quality of the Mobile JKN application to identify elements that required optimization. The method used is the HEART Framework with a Goals-Signals-Metrics (GSM) approach to measure the emotional and behavioral aspects of users, and the Mobile Application Rating Scale (MARS) for objective technical quality is based on the mean scores. The success target for each key metrics in the HEART Framework dimensions was set at 80% for each key metric. The result showed that all HEART Framework dimensions exceeded the target, with highest achievement in the Engagement dimension at 86% and the lowest in Adoption at 81.4%. Meanwhile, the MARS results showed that the application quality was in the very good category with a total score of 4.235, with the Functionality dimension obtaining the lowest score of 3.984. these findings serve as the basis of BPJS Kesehatan strategy improving and satisfying digital services for communities with varying levels of digital literacy.*

Keywords: *Mobile JKN, HEART Framework, MARS*

INTRODUCTION

BPJS Kesehatan (Social Security Agency for Health) is legal entity that plays a crucial role in ensuring fair and comprehensive access to healthcare services for Indonesian citizens through the National Health Insurance program. As part of the national social security system, this institution provides protection against health risks and ensures the availability of services for the public (Damanik et al., 2024). Supporting digital transformation in the technology-based service sector requires technology-based services to accelerate administration, improve data accuracy, and expand service coverage (Zamzami & Anggarani, 2024). One such innovation is the Mobile JKN application, designed to facilitate participant registration, change participant data, check participant status, and queue at healthcare facilities.

Karangtalun village is a rural area with a high population density and varying levels of digital literacy. The use of digital technology, particularly public service applications like Mobile JKN, still faces various obstacles that impact its effectiveness and usability. Observations revealed several issues, including difficulties registering and logging into the application, frequent automatic account logouts after updates, and a lack of up-to-date information regarding doctor schedules. Furthermore, several features are rarely used, while important features like changing health facilities or checking membership status are somewhat difficult to find. This situation suggest that interface design, ease of navigation, and user experience play a crucial role in the acceptance of digital systems like Mobile JKN. Perceived user-friendliness is the most influential factor in the acceptance of application-based technology (Iskandar et al., 2022).

Although the Mobile JKN application has served as the primary means for the public to access BPJS Kesehatan services, users still experience as a number of technical issues, such as difficulties in the registration process, automatic account logouts after updates, and a confusing menu interface. This indicate that the user experience is not entirely satisfactory and can reduce satisfaction with the application. Therefore, this study aims to evaluate the Mobile JKN user experience to identify elements that require improvement, particularly in terms of user friendliness, effectiveness, and user satisfaction (Irfantiyardi & Prabowo, 2024). This study was conducted using the HEART Framework and the Mobile Application Rating Scale (MARS) to generate suggestions for improvements for future BPJS Kesehatan digital service developers.

Previous research has used various methods to evaluate the Mobile JKN application, but limitations remain. The System Usability Scale (SUS) method is only able to measure perceptions quantitatively without explaining specific aspects of user behavior (Handasari et al., 2024). Meanwhile, the End-User Computing Satisfaction (EUCS) method focuses more on final satisfaction without considering the emotional dimension during the interaction process (Jannah et al., 2023). Similarly, the Heuristic Evaluation method tends to be subjective, based on expert evaluators, making it less able to fully describe the direct experience felt by users in the field (Aziza & Ristriani, 2023).

Due to the limitations of previous evaluation methods, this study applied a combination of the HEART Framework and the Mobile Application Rating Scale (MARS) because both methods can provide an in-depth assessment of the application experience and quality. The HEART Framework is a method designed by the Google UX team with an emphasis on five main aspects: Happiness, Engagement, Adoption, Retention, and Task Success. These five dimensions represent various aspects of the user experience, ranging from emotional satisfaction to user success in completing task in the application (Alijoyo et al., 2024). On the other hand, Mobile Application Rating Scale (MARS) is applied to measure application quality through four main dimension: Engagement, Functionality, Aesthetics, and Information Quality. Furthermore, MARS is complemented by a subjective dimension, Subjective Quality, which is used to represent users personal assessments of the application's usefulness, feasibility, and overall quality (Irfantiyardi & Prabowo, 2024). The simultaneous application of these two methods allows for a more in-depth analysis, encompassing technical, emotional, and interactive evaluations of Mobile JKN application users.

RESEARCH METHOD

this study applied a descriptive quantitative approach to evaluate the Mobile JKN application in Karangtalun Village. A descriptive method with a quantitative approach was used to explain the evaluation results systematically, factually, and accurately regarding the facts found in the field (Sugiyono, 2011). Data collection was conducted on 161 respondents selected using a purposive sampling technique with the criteria of Karangtalun Village residents who actively use the application. The research procedure was systematically structured to integrate the evaluation of the affective user experience with a technical audit of the application quality.

1. HEART-GSM Research Design
   The effectiveness measurement in this methos uses the Goals-Signals-Metrics (GSM) approach. This approach establishes success targets (Goals), assessed indicators (Signals), and measurements (Metrics). The use of the HEART Framework in evaluating government-owned health apps has been proven to provide a comprehensive picture of user emotional perceptions and loyalty (Suhaerudin & Alijoyo, 2022). The GSM used for the evaluation in this study are as follows:
   a. Happiness: The goal in for 80% of users to feel emotionally satisfied and comfortable. Signals are statements of service satisfaction measure using metrics on a 1-5 Likert scale.
   b. Engagement: the goal is for 80% of active users to regularly interact with features. Signals are statements of interaction intensity measured using metrics on a 1-5 Likert scale.
   c. Adoption: The goal is for 80% of new users to decide to use app due to its initial ease of user. Signals are statements of comfort during the first interaction with the application, measured using Likert-scale metrics on a 1-5 scale.
   d. Retention: A goal of 80% of users intending to continue using the application. Signals are statements of using consistency, measured using Likers-scale metrics on a 1-5 scale.
   e. Task Success: A goal of 80% of users successfully completing task efficiently. Signals are statements of user fluency in completing tasks, measured using Likert-scale metrics on a 1-5 scale.
2. MARS Instrument
   The technical quality evaluation of the application was conducted using the MARS, developed to assess the suitability of mHealth applications (Stoyanov et al., 2015). This instrument encompasses both objective and subjective quality aspects. Objective quality is measured through four main dimensions: Engagement to assess interactivity, Functionality to measure ease of navigation, Aesthetics to evaluate the visual appeal of the interface, and Information Quality to assess the accuracy of the content (Khatulistiwa et al., 2021). Furthermore, the Subjective Quality dimension is used to represent the user's personal perspective on the app's suitability for recommendation. All items in this instrument are measured using a 1-5 Likert Scale.
3. Data Analysis and Processing Techniques
   The data collected through the questionnaire was processed through a data cleaning phase before being analyzed using descriptive statistical techniques, which were divided into two main stages:
   a. HEART Framework (GSM) Analysis
      The analysis was conducted by calculating the percentage of respondents who responded positively to each Signals indicator. A dimension was deemed successful if the Metrics calculation reached or exceeded the target (Goals) of 80%. This result will map the extent to which the application meets user behavioral expectations.
   b. Mobile Application Rating Scale (MARS) Analysis

MARS data analysis was conducted using descriptive statistics to evaluate objective dimensions: Engagement, Functionality, Aesthetics, Information Quality, and Subjective Quality. The data processing process focused on calculating the mean value of

respondents scores on each indicator. These mean scores were then categorized to map the technical and functional quality of the Mobile JKN application and identify system weaknesses that require optimization based on user perceptions in Karangtalun Village.

RESULTS AND DISCUSSION

1. User Experience Analysis with the HEART Framework

   Based on data processing using the Goals-Signals-Metrics (GSM) methos, the evaluation results show the level of user experience achieved on the Mobile JKN application in Karangtalun Village. The percentage of positive responses compared to the target threshold (Goals) of 80%, as presented in Table 1.

Table 1 HEART Framework Dimension Acievement

Dimension	Total Score	Percentage (%)	Goals Status
Happiness	2065	85.5%	Achieved
Engagements	2078	86%	Achieved
Adoption	1967	81.4%	Achieved
Retention	2040	84.5%	Achieved
Task Success	1992	82.5%	Achieved

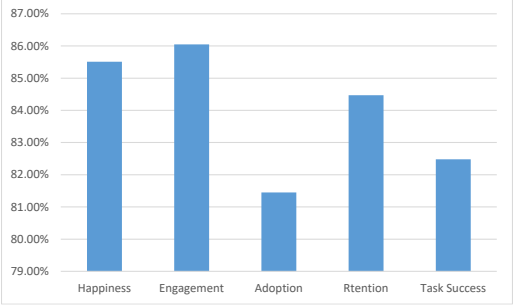

Figure 1 HEART Framework Dimension Achievements

Descriptive Analysis:

Based on data processing using the Goals-Signals-Metrics (GSM) method, the evaluation results indicate a high level of user experience for the Mobile JKN application in Karangtalun Village. As visualized in Figure 1, all dimension in the HEART Framework have met the success criteria, with percentages above 80%. A more in-depth explanation of each dimension is as follows:

a. Happiness achieved a score of 85.5%, indicating that respondents in Karangtalun Village experienced satisfaction and a positive emotional experience when using the Mobile JKN application. This score significantly exceeds the 80% threshold, demonstrating that the goal of user convenience has been met. The researcher recommends continuing user trust and satisfaction in accessing healthcare needs.
b. Engagement reached 86% indicating a very high level of user interaction with the application's is not only used occasionally but has become a routinely accessed interactive platform for BPJS Kesehatan serviced. Having achieved the target, the user engagement goal has been decalred maximally achieved.
c. Adoption scored 81.4%, indicating that the user transition to using the app was effective. A score above 80% indicates that the community successfully navigated the technical barriers to initial use.
d. Retention score 84.5%, demonstrating the app's success in maintaining user loyalty and encouraging continued use of Mobile JKN as its primary healthcare administration solution. This achievement met the research target, indicating the app has strong long-term utility, making users less likely to switch to manual services.
e. Task Success scored 82.5%, indicating a high level of effectiveness in completing various tasks within the app, such as finding healthcare facilities and waiting in line. This success in exceeding the minimum target 80% demonstrates that the app's functional flow is sufficiently intuitive for users, although navigation optimization still needs to be considered to minimize data input errors.

2. Application Quality Analysis with MARS

   Technical quality evaluation was conducted by calculating the average score for the objective and subjective dimensions. The results of the mean score calculation for each aspect are presented in Table 2.

Table 2 MARS Score

Dimension	Total Score	Mean	Description
Engagement	3276	4.070	Good
Functionality	2566	3.984	Good
Aesthetics	2054	4.253	Very Good
Information Quality	4753	4.212	Very Good
Mean Objective Quality		4.131	Good
Subjective Quality	2817	4.374	Very Good
Total MARS Score		4.253	Verry Good

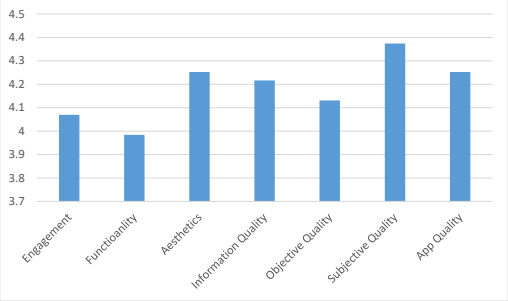

Figure 2 MARS Score Graph

The evaluation using the Mobile Application Rating Scale (MARS) instrument shows that the Mobile JKN application has very adequate quality, with a total MARS score of 4.253, which is considered very good. The application's objective quality is in the good category at 4.131, with the main advantages being the Aesthetics aspect at 4.253 and the Information Quality aspect at 4.212, which is considered very good. Based on the visualization in Figure 2, a comparison of scores between dimension shows the superior technical quality of the application. This is reinforced by the Subjective Quality dimension which achieved the highest score 4.374, reflecting personal satisfaction and very high acceptance form the Karangtalun Village community. Overall, Mobile JKN. Overall, Mobile JKN has proven to be a reliable and effective digital platform. However, strengthening engagement and functionality is still recommended to ensure the stability of digital healthcare services in the future.

3. Discussion

The integration of the evaluation results between the HEART Framework and Mobile Application Rating Scale (MARS) demonstrates strong consistency in the implementation of Mobile JKN in Karangtalun Village. All HEART Framework dimensions successfully achieved the 80% target, demonstrating the application's technical quality, with a total score of 4.253, which directly impacts positive user experiences. The effectiveness of the Mobile JKN application in facilitating access to digital healthcare services aligns with previous research showing that using this application significantly optimizes service procedures (Prasetiyo & Safuan, 2022). High scores on the Aesthetics and Information Quality dimensions were the main factors driving user satisfaction 85.5% in the Happiness dimension and active engagement 86% in the Engagement dimension. The public felt safe using the system because the information presented was accurate and supported by a communicative interface.

The high score on the Subjective Quality dimension reaching 4.374, provides a logical explanation for the user loyalty rate for 84.5% in the Retention dimension. This confirm that the public views Mobile JKN not only use as a functional performance but also as a solution for essential healthcare administration needs. Although the Functionality and Task Success dimension scored lowest compared to the other dimensions, both still exceeded the established success threshold. There result indicate that optimizing the navigation flow is still necessary to adapt to a community with diverse digital skills.

CONCLUSION

The implementation of the Mobile JKN application in Karangtalun Village has proven successful, providing a positive user experience and stable technical quality. Based on the evaluation, the community demonstrated a high level of satisfaction and active engagement in using the application for health administration needs. These results confirm that all user experience and system quality variables have optimally met the established success standards.

The application's primary strength lies in its accurate information presentation and interface design, which builds user trust in Karangtalun Village. Although all technical and functional aspects have been achieved, it remains a priority for ongoing development. The alignment between system reliability and ease of interaction is a key determinant of the effectiveness of digital services. To improve service accessibility, simplifying the navigation flow is a strategic recommendation to ensure the application remains easy to operate for people with varying levels of digital literacy.

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