
Usability Evaluation of the Online Marriage Registration Feature in SIMKAH

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ABSTRACT

The development of digital technology has encouraged government agencies to adopt online-based public services. One such system is SIMKAH (Marriage Management Information System), a web-based platform initiated by the Indonesian Ministry of Religious Affairs to simplify marriage registration processes at Kantor Urusan Agama (KUA). However, several usability challenges remain, particularly in its online registration feature. This study aims to evaluate the usability of SIMKAH using the Think Aloud method based on ISO 9241-11, focusing on effectiveness, efficiency, and satisfaction aspects. The study involved 10 participants, all prospective brides and grooms who had never used SIMKAH before. They were asked to complete 10 scenario-based tasks while verbalizing their thoughts. The results show a high effectiveness rate of 87%, indicating that users were generally able to complete tasks successfully. However, efficiency was affected by lengthy form fields and confusing file upload sections. Satisfaction received a score of 4.1 out of 5, reflecting a positive experience overall, although users noted a lack of clear guidance, feedback notifications, and mobile optimization. User feedback highlighted the need for interface improvements, such as simplifying form structures, adding real-time validation, implementing autosave features, and enhancing visual guidance. These findings suggest that while SIMKAH is functionally adequate, improvements in usability are crucial to ensure a more seamless and satisfying user experience in digital public services.

Keywords: Effectiveness; Efficiency; Marriage registration; Public service; Satisfaction; SIMKAH; Think Aloud; Usability; User experience; Website interface

INTRODUCTION

Digital transformation in the government sector has driven various public service innovations aimed at increasing efficiency, transparency, and accountability (Dhiannisa et al., 2024). One implementation of this initiative is the development of SIMKAH (Sistem Informasi Manajemen Nikah or Marriage Management Information System), a digital platform created by the Ministry of Religious Affairs. This system is designed to simplify the marriage registration process by allowing prospective couples to complete administrative procedures such as entering personal information, uploading documents, and recording their marriage electronically without the need to visit the Religious Affairs Office (KUA) in person (Mukiyanto, 2024). SIMKAH was introduced to meet public expectations for services that are faster, more accessible, and free from complex bureaucratic processes (Putri & Dewi, 2024).

Among SIMKAH's main features is its online marriage registration system. This feature allows users to enter personal data, upload required documents, select a wedding schedule and location, and track the status of their application independently. Although the feature was designed to enhance convenience, users have reported various challenges in practice. These include confusing interface layouts, unclear instructions, slow system performance during peak times, and the absence of real-time validation with national population databases (Basra et al., 2024). These recurring issues indicate a misalignment between the system's design and the actual needs of its users, highlighting the importance of evaluating its usability.

Such usability problems do not only affect individual user satisfaction but also reduce the overall effectiveness of the digital service. Users who encounter difficulties during the registration process may abandon it or revert to manual registration at the KUA office (Utami, 2022). These situations hinder the intended benefits of digital transformation and may diminish public trust in government digital platforms. For this reason, a structured usability evaluation from the user's perspective is necessary to ensure the system meets real-world needs.

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Usability refers to the extent to which a system can be used by specific users to achieve particular goals effectively, efficiently, and with satisfaction in a defined context of use (Kurniawan et al., 2024). ISO 9241-11, an internationally recognized usability standard, outlines three dimensions for evaluating usability: effectiveness, which relates to the successful completion of tasks; efficiency, which refers to the time and effort required; and satisfaction, which involves the user's comfort and acceptance of the system (Farid et al., 2022). This framework offers a comprehensive and user-oriented approach to assessing how well a system supports its intended functions.

To examine these dimensions in depth, this study employs the Think Aloud method. This qualitative approach asks users to verbalize their thoughts and feelings while interacting with the system. Observing users in real time allows researchers to identify cognitive barriers such as hesitation, confusion, or uncertainty that are often overlooked in standard post-use questionnaires (Maharani et al., 2023). For public digital services like SIMKAH, which serve a broad population with varying levels of digital literacy, the Think Aloud method provides richer and more actionable insights.

While prior studies have addressed SIMKAH's usability, most of them examine the system as a whole or rely on general survey instruments such as usability questionnaires or heuristic checklists (Tiarani et al., 2023). There is currently no research that specifically investigates the online registration feature using the Think Aloud method. This represents a clear gap in the literature that this study intends to address.

Based on this context, the present study aims to evaluate the usability of SIMKAH's online marriage registration feature using the Think Aloud method, with reference to the ISO 9241-11 framework. By analyzing users' interactions in real time and relating their experiences to the three usability dimensions, this research identifies practical interface challenges and proposes recommendations for improvement. The findings are expected to support the development of more inclusive, efficient, and user-centered digital public services in Indonesia.

LITERATURE REVIEW

Usability evaluation using the Think Aloud method has been widely applied to public service systems, particularly in digital government platforms and examined the website of the MNO City Education and Culture Office using the Think Aloud method to assess interface usability. Their study, involving eight participants from various age groups, identified issues such as non-functional features and the use of uncommon terminology. The results led to the development of an HTML-based prototype to improve the system. However, their evaluation did not employ a structured usability framework, and no metrics, such as task success or user satisfaction, were formally applied.

In a different context, (Asroni et al., 2024) evaluated the Labuan Bajo Tourism App using the Retrospective Think Aloud method. Their study involved ten respondents, including both international and domestic tourists, and measured usability based on effectiveness, efficiency, and satisfaction. The findings showed a high task completion rate of 96%, indicating strong effectiveness, but revealed a low time-based efficiency score of only 13.1%. Although the system received a SUS satisfaction score of 84.25, users still reported difficulties with function consistency and interface complexity. Despite using usability metrics, the study did not incorporate ISO 9241-11 as a guiding framework, nor did it apply real-time evaluation.

(Wardani and Pratama, 2023) conducted a usability study on the JMO (Jamsostek Mobile) application, using a combination of Think Aloud and Heuristic Evaluation. Their analysis identified key usability problems, especially in navigation flow and user comprehension of UI elements. The study emphasized the value of using both verbal user feedback and heuristic principles to recommend improvements to the user interface. However, it focused on a mobile application for employment services and did not adopt a standardized usability framework like ISO 9241-11, limiting the consistency of their usability assessment.

Similarly, (Ayuni et al., 2023) evaluated the UIN Suska Riau scholarship information system using both Think Aloud and Heuristic Evaluation methods. Usability issues such as inconsistent screen layouts, lack of password recovery features, and poor help accessibility were identified. Their research involved 8 to 10 participants and resulted in 23 design improvement suggestions. Quantitative data were processed using SPSS, and heuristic evaluation produced a usability score of 75%, which indicated moderate system quality. Although this mixed-method approach offered comprehensive insights, the study did not reference any formal usability model or real-time observation protocol.

A broader evaluation was conducted by (Ariansidi et al., 2023), who assessed the LAPORBUP public complaint system using Performance Measurement, Retrospective Think Aloud, and the User Experience Questionnaire (UEQ). The study involved 54 respondents, including representatives from local government and public users. Their analysis showed several issues affecting effectiveness and efficiency during task execution. While the UEQ data indicated positive scores in attractiveness (1.75), clarity (1.48), efficiency (1.18), and novelty (1.81), the absence of real-time

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task monitoring and the use of retrospective methods limited the depth of behavioral data collected. Moreover, the evaluation was not aligned with ISO 9241-11 or other international usability standards.

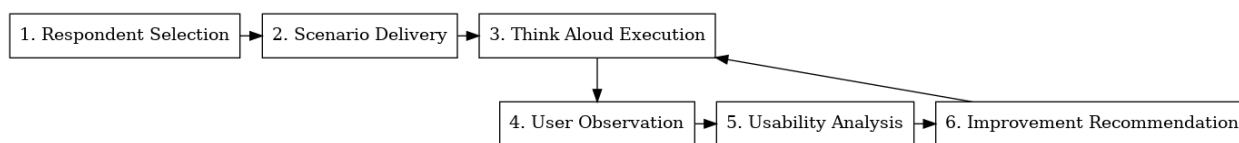
Across these five studies, the Think Aloud method has consistently proven useful in identifying usability problems that are not easily detected through surveys or logs. However, certain gaps remain evident. First, most prior research either used retrospective Think Aloud or combined it with heuristic tools, making it difficult to capture users' real-time cognitive processes (Asroni et al., 2024; Ariansidi et al., 2023). Second, none of the studies applied ISO 9241-11 as a structured reference for evaluating usability, which limits comparability and systematic measurement (Wardani & Pratama, 2023; Ayuni et al., 2023). Third, no existing research specifically focuses on a government-regulated web-based system for religious administrative services like SIMKAH.

This study addresses those gaps by conducting a real-time usability evaluation of SIMKAH's online marriage registration feature using the Think Aloud method. It adopts ISO 9241-11 as the primary framework, which defines usability across three core dimensions: effectiveness, efficiency, and satisfaction (Farid et al., 2022; Kurniawan et al., 2024). By focusing on a widely used national platform developed by the Ministry of Religious Affairs, this study offers novel insights into user experience in the context of religious e-government services in Indonesia. Moreover, it contributes methodologically by combining real-time cognitive observation with a standardized usability model, thereby enabling deeper diagnosis of system weaknesses and more actionable design recommendations (Maharani et al., 2023).

METHOD

This study uses a descriptive qualitative approach with the Think Aloud method to evaluate the usability of the online registration feature on the SIMKAH website. The Think Aloud method was chosen because it is effective in revealing users' experiences and constraints verbally when they use the system, as explained by Ericsson & Simon (1993) in a study on verbal-based interface testing. This approach has also been shown to be relevant for usability testing on web-based systems (Rahmi, 2019).

The research procedure was conducted systematically and is illustrated in **Figure 1**, which outlines the steps from participant selection to data analysis. The process began with initial planning and purposive sampling, followed by task-based usability testing, data recording and observation, and finally, data processing and evaluation.



Picture 1. Research Procedure

A total of 10 participants were involved in this study. All were prospective brides and grooms who had never used the SIMKAH platform before. A purposive sampling technique was employed to ensure that participants met the characteristics of real system users.

Each participant was instructed to complete 10 task scenarios simulating the full process of online marriage registration. These scenarios included accessing the SIMKAH homepage, registering as a groom, inputting the bride's information, uploading required documents, selecting the wedding schedule and location, verifying data accuracy, simulating data input errors, using help features, logging out, and reviewing confirmation messages.

During each task, participants were asked to think aloud by verbalizing their thoughts, feelings, or doubts while interacting with the system. At the same time, researchers conducted participatory observations, noting users' expressions, reactions, and any difficulties encountered. The entire process was documented through video and audio recordings, supported by field notes to capture contextual details. From this process, the primary data collected included participants' verbal expressions, task completion outcomes (success or failure), time spent on each task, observable user behavior, and satisfaction levels measured using a 5-point Likert scale after each task.

Before analysis, all raw data underwent a pre-processing phase to enhance clarity and structure. The audio and video recordings were transcribed into text, irrelevant verbal content was filtered, and transcripts were segmented based on each task scenario. Field notes were synchronized with specific video segments to provide contextual depth. This process allowed the unstructured qualitative data to be organized into analyzable units aligned with usability criteria.

The evaluation was carried out referring to the ISO 9241-11 standard:

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Effectiveness

Measuring the number of tasks that respondents successfully completed in a test scenario (Putro et al., 2024).

$$Effectiveness = \frac{Successful\ Tasks}{Total\ Tasks} \times 100\% \quad (1)$$

Efficiency.

Measuring the time used by respondents to complete tasks (Mairistiansyah & Nisa, 2024)

$$ORE = \sum n_{ij} \sum t_{ij} \quad (2)$$

Where:

n_{ij} = 1 if the i-th task by the j-th respondent is successful,

t_{ij} = task completion time.

Satisfaction

Measuring the level of user comfort and satisfaction when using the system (Setiawan et al., 2022). Satisfaction is assessed using a Likert scale of 1–5 for each task, then averaged.

$$Satisfaction = \frac{Total\ Score}{Number\ of\ Tasks} \quad (3)$$

Meanwhile, the Think Aloud transcripts were thematically coded to identify recurring usability problems, design-related obstacles, and user feedback. This mixed-methods analysis enabled a comprehensive understanding of both user performance and subjective experience, providing a strong basis for design improvement recommendations.

RESULTS

This study was conducted to evaluate the usability of the online marriage registration feature on the SIMKAH website using the Think Aloud method, based on the three core dimensions of ISO 9241-11: effectiveness, efficiency, and user satisfaction. The evaluation process was carried out comprehensively through six interrelated stages, from respondent selection to data analysis and improvement recommendations.

The selection of participants used purposive sampling, which involves deliberately choosing individuals based on specific criteria. The chosen participants were prospective brides or grooms who had never used the SIMKAH system before but possessed basic digital literacy skills with devices such as laptops or smartphones. This criterion ensured that the participants accurately represented real users of the service. Ten participants were involved in the usability testing.

Following participant selection, the next step was to administer a set of task scenarios. The researcher designed ten task scenarios reflecting the real sequence of steps in registering for marriage online via the SIMKAH system. These scenarios covered essential actions, from accessing the main page to receiving confirmation that the registration had been submitted.

To evaluate the usability of each feature comprehensively, users were asked to complete the tasks while voicing their thoughts aloud, following the Think Aloud protocol. This method captured spontaneous reactions, hesitations, and confusion during the process, providing valuable qualitative insights into user behavior and system navigation. The test was conducted with 10 task scenarios shown in Table 1, including:

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Table 1 Taks Scenario

Yes	Question
1.	Open the SIMKAH website and look for the online registration menu for the bride-to-be
2.	Register yourself by filling in your personal data (e.g. name, NIK, date of birth) on the form provided.
3.	Fill in the personal data of the bride-to-be according to the information that has been provided.
4.	Try uploading the required documents for registration
5.	Choose the schedule and location of your desired wedding.
6.	Verify the data that has been filled in and make sure all the information is correct before submitting.
7.	Simulate data filling errors, such as entering an incorrect NIK.
8.	Try using the help or guide feature (if available).
9.	Log out of your account by clicking the log out button (if available).
10.	After the form is submitted, see the confirmation or notification you get.

Throughout the observation and data collection phase, various key aspects were recorded: task completion success, task duration, user satisfaction scores, and real-time verbal feedback. The following tables present raw observational data on task success rates, completion times, satisfaction scores, and user feedback.

Task success reflects how effectively users were able to complete the given scenarios. Based on the data collected from ten respondents across ten task scenarios, it was observed that the majority of users were able to complete most tasks successfully. However, certain tasks—such as uploading documents or selecting a KUA—had slightly lower success rates, indicating areas requiring improvement. Table 2 shows the completion status of each task per participant, including the number and percentage of successful completions.

Table 2. Task Completion Success

Task	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	Berhasil	Gagal	Persentase
1	✓	✓	✓	✓	✗	✓	✓	✗	✓	✓	8	2	80%
2	✓	✗	✓	✗	✓	✓	✓	✓	✓	✓	8	2	80%
3	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	9	1	90%
4	✓	✓	✗	✓	✓	✓	✓	✓	✓	✗	9	1	90%
5	✓	✓	✓	✓	✗	✓	✓	✗	✓	✓	8	2	80%
6	✗	✓	✗	✓	✓	✓	✓	✓	✓	✗	7	3	70%
7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	9	1	90%
8	✓	✓	✗	✓	✗	✓	✓	✓	✓	✓	8	1	80%
9	✓	✗	✓	✗	✓	✓	✓	✗	✓	✓	7	3	70%
10	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	9	1	90%

Efficiency was assessed by measuring the time required by each respondent to complete every task scenario. Completion time can reveal whether users are navigating the interface fluently or encountering delays and confusion. Table 3 displays the duration (in seconds) taken by each respondent to complete each task. Dashes (–) indicate incomplete or skipped tasks.

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Table 3. Task Completion Time (in second)

Rsp	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	Total
R1	60	300	445	180	–	180	30	–	30	120	1435
R2	60	387	600	–	30	120	30	30	30	240	1647
R3	30	420	300	–	120	30	30	30	30	180	1200
R4	30	362	360	240	60	180	30	75	180	–	1697
R5	60	240	400	180	–	120	30	–	120	120	1380
R6	30	288	300	210	60	160	30	30	30	–	1438
R7	60	330	300	240	97	30	85	30	25	–	1377
R8	90	345	420	240	–	180	30	30	30	240	1665
R9	30	480	410	–	30	180	30	–	20	180	1680
R10	30	360	240	180	60	120	30	–	30	60	1170

User satisfaction was measured using a Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied), provided after the completion of each task. This rating reflects user comfort, perceived ease of use, and satisfaction with system performance. The following table shows satisfaction scores given by each respondent across all tasks.

Table 4. Satisfaction Scores (Likert scale 1–5)

Resp	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
R1	5	3	2	4	4	5	5	3	5	5
R2	4	5	3	3	2	4	5	4	5	5
R3	5	4	2	5	1	5	5	2	5	4
R4	5	3	4	5	4	5	5	5	3	5
R5	5	5	2	5	4	5	5	5	5	5
R6	4	3	2	4	5	5	5	4	5	4
R7	5	4	5	4	2	5	5	4	5	4
R8	5	4	1	3	4	5	5	2	5	1
R9	5	3	3	3	3	4	4	2	4	2
R10	5	4	5	5	5	5	5	4	5	4

In addition to quantitative data, valuable qualitative insights were gathered through the Think Aloud method. Users frequently expressed challenges and impressions that enriched the interpretation of the numeric results. The recurring feedback themes included complex data input, lack of clarity in file format requirements, poor visibility of help features, and limited confirmation feedback after submitting the form. Table 5 compiles the most commonly cited feedback points from respondents.

Table 5. Verbal Feedback

No	Umpan Balik
1	"Proses pengisian data cukup lama dan membingungkan."
2	"Saya kesulitan memahami format file yang harus diunggah."
3	"Fitur bantuan kurang terlihat, dan saya sering kembali ke halaman awal saat mengisi data."
4	"Proses logout terlalu banyak langkah."
5	"Data calon pasangan mirip dengan data pribadi, sedikit membingungkan."
6	"Konfirmasi pengiriman formulir tidak cukup jelas."
7	"Tugas pengisian data terlalu banyak, sebaiknya ada fitur autosave."
8	"Saya tidak tahu ada fitur bantuan, tidak ada ikon yang jelas."
9	"Fitur memilih jadwal nikah cukup baik, tapi di mobile agak sulit."
10	"Secara keseluruhan, saya puas, namun kecepatan sistem perlu diperbaiki."

Evaluasi usability terhadap sistem pendaftaran nikah daring SIMKAH dilakukan dengan memperhatikan tiga aspek utama berdasarkan standar ISO 9241-11:

Effectiveness was measured by calculating the number of tasks successfully completed by each participant. Most users

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successfully completed between 7 and 9 tasks, indicating that the system was largely functional, although some steps, such as uploading documents and entering partner data, proved more challenging. As shown in Table 2, the average task success rate was 83%

Table 6. Average Response Effectiveness Rate

Information	Value
Number of respondents	10
Average successful task	8.3 out of 10
Average effectiveness	83%

These results reflect that users generally found the system effective, though minor usability barriers were present in more complex tasks.

Efficiency was assessed through the total time taken by each participant to complete all tasks. Task durations varied depending on familiarity, navigation ease, and system responsiveness. Most users completed all ten tasks in under 30 minutes.

Table 7. Average Completion Time per Task

Yes	Task	Total Time (seconds)
1	Access the SIMKAH home page	1435
2	Fill in personal data	1647
3	Fill in the pair data	1200
4	Upload a document	1697
5	Choosing a wedding schedule	1380
6	View registration details	1438
7	Correction of input errors	1377
8	Help simulation	1665
9	System logout	1680
10	Successful delivery notification	1170
	Total average time of all tasks	1434.9 (~23.9 min)

The average time required to complete all tasks was approximately 23.9 minutes. The most time-consuming tasks typically involved data entry and verification, suggesting these areas could benefit from interface and logic optimizations.

Satisfaction scores were collected after each task using a 5-point Likert scale (1 = very dissatisfied, 5 = very satisfied). The ratings reflect how comfortable and confident users felt while interacting with the system. Table 4 presents the average satisfaction score for each task.

Table 8. Average Respondent Satisfaction Score

Information	Value
Total score	41 of 50
Average per respondent	4.1 out of 5
Category	Satisfied

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This satisfaction level indicates a generally positive experience, although some users expressed discomfort or confusion in tasks involving file uploads and detailed data input.

User Feedback and Improvement Recommendations

Verbal comments recorded during the Think Aloud session revealed recurring usability concerns. The feedback has been categorized and paired with specific system improvement recommendations. Table 5 summarizes major user feedback and proposed enhancements.

Table 9. Respondent Feedback and Improvement Recommendations

Yes	Respondent Feedback	Recommended Improvements
1	Long and confusing filling forms	Simplify forms and add automatic validation
2	Don't know the format of uploading documents	Add clear upload instructions
3	Invisible assistance features	Make the help button stand out more
4	Logout is too many steps	Simplify the logout process
5	Personal and partner data look similar	Differentiate visual displays and input labels
6	Not sure the form has been submitted	Add a clear confirmation notification
7	Fear of data being lost during charging	Add an autosave feature
8	Indirect assistance features are visible	Show contextual help at charging
9	Unresponsive wedding schedule display on cellphone	Optimize the UI for mobile devices
10	Slow upload process	Improve server performance and file compression

DISCUSSIONS

This study presents a comprehensive usability evaluation of the online marriage registration feature on the SIMKAH website, employing the Think Aloud method and guided by the ISO 9241-11 framework. The evaluation examined three fundamental dimensions of usability: effectiveness, efficiency, and satisfaction, offering a holistic understanding of how real users interact with this public digital service.

The evaluation was structured around ten task scenarios, each designed to reflect actual user activities during the online marriage registration process. As participants completed each task, they were instructed to verbalize their thoughts in real time, allowing researchers to capture both behavioral and cognitive responses. This process yielded both quantitative data, such as task completion rates, duration, and satisfaction scores, and qualitative insights from user commentary, which were essential in identifying systemic usability issues.

In terms of effectiveness, users demonstrated a high level of task completion, achieving an average success rate of 83%. This indicates that SIMKAH's core functionalities, such as navigating the homepage, selecting a wedding schedule, and submitting a registration form, were generally accessible even to first-time users. Nevertheless, effectiveness decreased slightly in tasks involving document uploads, data verification, and differentiation between personal and partner information fields. These difficulties were largely attributed to unclear instructions, overlapping form structures, and the lack of supporting guidance elements. Such findings suggest a need for more intuitive labeling and clearer task flow within these segments.

Efficiency, measured by the time taken to complete each task, showed greater variability. Tasks involving detailed data entry, such as personal and partner profiles, often exceeded 300 seconds. Participants reported that the length and visual similarity of forms contributed to confusion and prolonged input time. The absence of progress indicators or step-by-step segmentation further contributed to inefficiency. These observations indicate that while SIMKAH enables task completion, its current design increases users' cognitive load. This aligns with previous studies such as Asroni et al. (2024), which found that poor interface structuring significantly hinders user efficiency despite the technical operability of the system.

Regarding user satisfaction, the average rating was 4.1 out of 5, suggesting a generally favorable user experience. Participants expressed satisfaction with features such as menu navigation, login/logout processes, and the overall flow of the system. However, lower satisfaction was reported in tasks related to document uploads, help access, and confirmation notifications. Several participants were unsure whether their submission had been successful due to the

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lack of explicit feedback messages. This echoes findings from Wardani and Pratama (2023), who emphasized that system feedback plays a crucial role in shaping user trust and perceived reliability.

Verbal feedback collected through the Think Aloud protocol further supports the quantitative findings. Participants consistently highlighted the need for clearer file format instructions, visible help features, and distinct visual cues between form sections. Users also expressed concerns about data loss during long input sessions, recommending the addition of autosave functionality and real-time validation. These suggestions reflect a broader user expectation for a responsive, accessible, and error-preventive system, especially when dealing with critical civil services.

When compared with earlier usability studies on public service systems, the findings of this study reaffirm several patterns. As noted by Sulistiya et al. (2021), even a functionally complete system can frustrate users if the interface lacks intuitiveness. Similarly, Tiarani et al. (2023) found that high effectiveness rates do not guarantee overall usability when efficiency and satisfaction are compromised by complex workflows. Unlike previous research, this study contributes a real-time, observation-based usability diagnosis anchored in ISO 9241-11, providing deeper insights into user behavior and interface design challenges in a religious administrative context.

Despite its contributions, this study has limitations. The participant pool consisted solely of prospective brides and grooms, without involving administrative users such as KUA staff who may have different workflows. Additionally, the qualitative nature of the Think Aloud method, while rich in insight, limits the generalizability of the findings due to the small sample size. Observer presence during testing may also have influenced user behavior. Future research should aim to involve a broader spectrum of users and incorporate mixed-method approaches to ensure more comprehensive and representative results.

CONCLUSION

This study evaluated the usability of the online marriage registration feature on the SIMKAH platform using the Think Aloud method, based on the three usability dimensions outlined in ISO 9241-11: effectiveness, efficiency, and satisfaction. The analysis revealed that the system is generally effective, with most participants able to complete the key registration tasks successfully, even without prior experience.

However, efficiency remains an area of concern. Several tasks, particularly those involving complex data entry and verification, required considerable time to complete. These inefficiencies were primarily caused by long and visually ambiguous forms, minimal segmentation, and a lack of guidance. While overall user satisfaction was positive, with an average rating of 4.1 out of 5, users identified several usability barriers, including insufficient feedback notifications, poorly visible help features, and limited mobile responsiveness.

The study contributes to the usability research of digital public services by combining real-time user observation with a standardized evaluation framework. Key recommendations resulting from this research include simplifying form structures, introducing real-time input validation and autosave functionality, improving visual clarity, and optimizing the system for mobile devices. These enhancements are expected to significantly improve the quality of the user experience and promote greater adoption of SIMKAH among Indonesian citizens.

In conclusion, while SIMKAH's online registration feature demonstrates strong usability potential, it must continue to evolve through iterative design improvements informed by user-centered evaluation. These findings reinforce the importance of aligning public digital services with actual user behaviors and expectations to ensure inclusive, efficient, and trusted e-government platforms.

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