

Evaluation Of The Buku Pokok Pemakaman Application In Supporting Smart Governance Using The System Usability Scale (SUS)

(A Case Study At The Department Of Population And Civil Registration Of Magetan Regency)

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Abstract—Buku Pokok Pemakaman Application is a web-based system developed by the Population and Civil Registration Office of Magetan Regency to support the management of death data. This study aims to evaluate the usability of the application using the System Usability Scale (SUS) method and to provide improvement recommendations based on the evaluation results. The study involved 112 respondents, who are village and sub-district (desa and kelurahan) operators acting as active users of the application. Data were collected through task-scenario testing to measure effectiveness and efficiency, distribution of the SUS questionnaire to measure user satisfaction, and interviews to identify problems in using the application. The data were analyzed using the effectiveness, efficiency, and System Usability Scale (SUS) metrics. The results show an effectiveness level of 98.98%, categorized as very effective. An efficiency value of 0.121 goals/sec indicates that users were able to complete tasks well. Meanwhile, the SUS evaluation obtained an average score of 68.59, which falls into Grade C, with a High Marginal acceptance level and an OK adjective rating. These results indicate that the application has met the aspects of effectiveness and efficiency but still requires improvement to increase user satisfaction. Based on the evaluation results, this study produced five interface improvement recommendations, realized in the form of mockups referring to the Google Material Design guidelines.

Kata Kunci— usability, System Usability Scale (SUS), buku pokok pemakaman, smart governance, information system evaluation.

I. INTRODUCTION

The Population and Civil Registration Office of Magetan Regency is an agency that provides population administration and civil registration services to the public. One of the innovations it has developed is the Buku Pokok Pemakaman Application, a web-based application launched on 13 January 2025 to replace the manual recording of death data. This application aims to produce accurate, valid, and verified death data in every village and sub-district. It provides various features, such as login, input, edit, delete, search, data export, password change, and logout. However, since its implementation the application has never been evaluated in terms of usability, so its level of effectiveness, efficiency, and user satisfaction remains unknown. In fact, usability evaluation is important for identifying problems from the early stages of implementation and serves as a basis for

developing a system that better suits user needs. The System Usability Scale (SUS) method can provide a quantitative picture of the user experience while identifying aspects of the system that need improvement [1]. In addition, SUS measurement results can be used as a basis for improving the interface, navigation, and features of the system [2].

Usability is an important aspect of system development because it determines how easily users can learn, operate, and utilize a system [3]. However, usability testing is still often overlooked because developers tend to focus more on technical aspects and data processing [4][5]. In fact, SUS can measure the level of user acceptance while providing input for refining the system design [6]. Unlike previous studies in terms of object, method, respondents, and resulting recommendations, this study evaluates the usability of the Cemetery Register Application using the SUS method by measuring the aspects of effectiveness, efficiency, and user satisfaction [7]. The SUS method was chosen because it is easy to apply, directly involves users, and has proven relevant for evaluating various web- and mobile-based applications [8]. Usability measurement also provides a basis for refining features and improving the quality of digital services [9][10].

Based on the above description, this study aims to analyze the usability level of the Cemetery Register Application of the Population and Civil Registration Office (Disdukcapil) of Magetan Regency using the System Usability Scale (SUS) method, involving village/sub-district operators, so as to produce improvement recommendations to increase ease of use, effectiveness, efficiency, and user satisfaction.

II. RESEARCH METHODOLOGY

Research methodology is a scientific working method carried out systematically and carefully to investigate a problem through the process of data collection, processing, analysis, and drawing conclusions [11]. This study uses the System Usability Scale (SUS) method, a questionnaire used to measure a system's level of usability based on users' subjective perceptions. The SUS questionnaire is administered after respondents have tried the system being evaluated, so that the ratings given reflect direct usage experience. The results of the SUS evaluation can be used as a basis for identifying system shortcomings and providing improvement recommendations so that the system better matches user needs

and expectations. In addition, this method also helps measure the ease of use of the system during the development process so that system-quality improvements can be made appropriately. The SUS questionnaire consists of 10 statements, with odd-numbered statements representing positive aspects and even-numbered statements representing negative aspects. Each statement is rated on a 1–5 Likert scale: (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree. The simple structure of the questionnaire makes SUS easy to apply while still providing a picture of a system's usability level. The following figure shows the flow of this study using the SUS method:

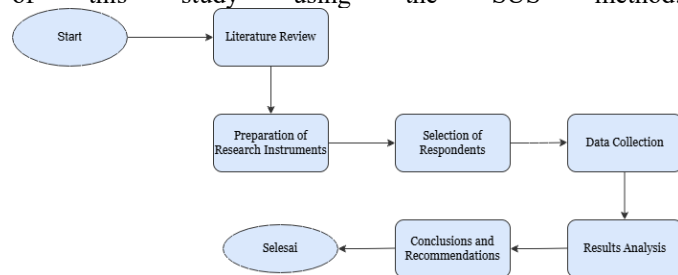


Fig. 1 Research Stages

A. Literature Study

The literature study in this research was carried out by collecting various information and references through reading and comparing a number of literature sources. This activity included a review of previous studies with the aim of obtaining references and theoretical foundations to support the research. Sources of information were obtained from theses, articles, scientific journals, books, and usability-related data listed in the bibliography. The entire process was aimed at supporting the analysis of the testing of the Buku Pokok Pemakaman application.

B. Research Instrument Preparation

1) Questionnaire Development

A questionnaire is a set of written questions used to obtain information from respondents — in the sense of reports about themselves or matters known to them. The SUS test consists of ten questionnaire items that must be answered by participants. Information about SUS can be seen in Table I.

TABLE I
SUS QUESTIONNAIRE STATEMENTS

No	Question	Answer Options
1.	I feel happy using this Buku Pokok Pemakaman application.	Scale 1 to 5
2.	This Buku Pokok Pemakaman application is too complicated to use.	Scale 1 to 5
3.	I feel that the Buku Pokok Pemakaman application is easy to understand and use.	Scale 1 to 5
4.	I need help from another person or special training to be able to use this application.	Scale 1 to 5
5.	Every feature in this Buku Pokok Pemakaman application can be used	Scale 1 to 5

	well.	
6.	I feel that this system is still not consistent in its use.	Scale 1 to 5
7.	I believe most people can learn to use this application easily.	Scale 1 to 5
8.	The Buku Pokok Pemakaman application feels confusing and difficult to use.	Scale 1 to 5
9.	I feel confident when using this application.	Scale 1 to 5
10.	I had to learn a lot of things first before I could use this application smoothly.	Scale 1 to 5

Odd-numbered statements reflect positive aspects, while even-numbered statements reflect negative aspects. Each statement is rated using a Likert scale.

2) Task Scenario

a. Explanation of the research objectives and questionnaire function to respondents

Providing initial information to respondents aims to give them a clear understanding of the research background and the benefits of their involvement. At this stage it was explained that the research was conducted to assess the usability level of the Buku Pokok Pemakaman Application of Disdukcapil Magetan. The researcher also explained that the questionnaire was used as a data-collection tool to evaluate usability aspects based on users' direct experience. This explanation is necessary so that respondents understand their role and participate optimally in the research.

b. Practicing features on the Buku Pokok Pemakaman website

This activity was carried out to determine the extent to which respondents were able to operate the Buku Pokok Pemakaman website. The task scenarios carried out by respondents included:

1. Login
2. Change Password menu
3. Input menu
4. Edit menu
5. Search menu
6. Export menu
7. Log Out

c. Interview

After respondents completed the tasks, the next stage was to conduct interviews with application users by distributing questions via a previously prepared Google Form link. The following is a list of questions given by the researcher to users:

TABLE II
INTERVIEW QUESTIONS

No	Question
1.	What did you feel while performing the tasks in the Buku Pokok Pemakaman application?
2.	Are there any features that need to be improved in the Buku Pokok Pemakaman application to make it easier to use?
3.	Which features need to be improved in the Buku Pokok

	Pemakaman application to make it easier to use?
4.	State the reasons why the feature needs to be improved, and write down your suggestions.

C. Respondent Selection

The sample size in this study was determined using the Slovin formula, in order to calculate a sample representative of the total number of active users who entered data into the Buku Pokok Pemakaman application during the last three months, with an error rate of 10% ($e = 0.1$). Based on the application's database, the total number of active users over the last three months was 167. The minimum number of respondents was calculated as follows:

$$n = \frac{N}{1 + N(e)^2} \quad (1)$$

$$n = \frac{167}{1 + 167(0.1)^2}$$

$$n = \frac{167}{1 + 1.67}$$

$$n = \frac{152}{2.67}$$

$$n = 62.55 \approx 63$$

n = number of samples/respondents

N = population size

e = tolerable sampling error rate, i.e., 10% or 0.1

The required sample size is 63 respondents, rounded up from the calculation result. Respondent criteria include:

1. Village/sub-district admins registered as active users or accessors of the Buku Pokok Pemakaman Application
2. Willing to participate in the study by filling out the questionnaire.

D. Data Collection

The questionnaire was distributed online to ensure active respondent participation and to reach all respondents more efficiently. The researcher collaborated with sub-district (kecamatan) operators to distribute the Google Forms link to village and sub-district operators through WhatsApp groups and personal messages. Respondents were given instructions on how to complete the form, the duration, and the submission deadline, with a two-week completion period. During this period the researcher periodically monitored the progress of questionnaire completion to ensure that all respondents finished within the set deadline

E. Data Processing and Analysis

To support the evaluation, the researcher used the System Usability Scale (SUS) instrument, which assesses the overall ease of use of a system or application. This allows the quality of the application to be evaluated accurately, enabling the identification of areas that need improvement. The following are the metrics used to measure three main aspects of usability:

1) Effectiveness Metric

Effectiveness indicates the level of user success in completing tasks using a system. In this study, effectiveness measurement refers to ISO 9241-11:2018 using the basic usability metric, giving a value of 1 if the task was completed

successfully and 0 if the task failed. The effectiveness value is calculated using the following equation:

$$SR = \frac{(S + (P \times 0.5))}{T} \times 100\% \quad (2)$$

SR = Success Rate

S = Success

P = Partial Success

T = Task

The 1991 Depdagri (Ministry of Home Affairs) R&D Reference Standard was used to analyze the success measurement results.

TABE III
EFFECTIVENESS MEASUREMENT STANDARD

No	Effectiveness Ratio	Achievement Level
1	<40%	Very Ineffective
2	40% - 59,99%	Ineffective
3	60% - 79,99%	Fairly Effective
4	≥80%	Very Effective

2) Efficiency Metric

Efficiency can be assessed based on the amount of time users need to complete a task, in seconds or minutes, to gauge how quickly the task can be finished. Task completion time is calculated by comparing the finish time with the start time. This process can be expressed with the following equation to ensure measurement accuracy:

$$TBE = \frac{\sum_{j=1}^R \sum_{i=1}^N \frac{n_{ij}}{t_{ij}}}{NR} \quad (3)$$

TBE = Time Based Efficiency

N = Total number of tasks

R = Number of users

n_{ij} = Result of task i by user j (1 if the user completed the task successfully, 0 otherwise)

t_{ij} = Time needed by user j to complete task i (if the task was not completed successfully, time is counted until the user stopped attempting it).

3) Satisfaction

User satisfaction was analyzed through a questionnaire distributed to users. The collected data were then calculated using the established formula and the System Usability Scale (SUS) method. Each respondent's score was calculated individually. To obtain the average SUS score, the scores of all respondents were summed and then divided by the number of respondents. The SUS calculation formula is:

$$\bar{X} = \frac{\sum X}{n} \quad (4)$$

$\bar{X}$ = Average SUS score

$\sum X$ = Sum of all respondents' SUS scores

n = Number of respondents

There are several rules for calculating the SUS score:

- For odd-numbered questions (1, 3, 5, 7, 9), the score contribution is calculated by subtracting one from the scale position.

- For even-numbered questions (2, 4, 6, 8, 10), the score contribution is calculated by subtracting the scale position from 5.
- The total score is then divided by 2.5 to obtain the final SUS score.
- The SUS questionnaire rating scale ranges from 0 to 100.

The rating result is determined by referring to the SUS score percentile range, which is generally calculated from user ratings. The table below shows the SUS score percentile range along with its rating categories: A, B, C, D, and E.

TABLE IV
SUS SCORE PERCENTIL RANGE

No	Grade	Keterangan
1	A	Score ≥ 80.3
2	B	$80.3 > \text{Score} \geq 74$
3	C	$74 > \text{Score} \geq 68$
4	D	$68 > \text{Score} \geq 51$
5	E	Score < 51

The score is then interpreted by comparing SUS scores.

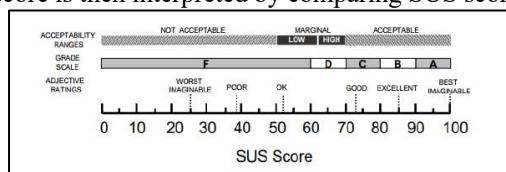


Fig. 2 SUS Score Percentile Rank

Fig. 2 shows the visual rating scale for the SUS score, interpreting the numerical score into three categories: Acceptability Ranges, Grade Scale, and Adjective Ratings.

F. Conclusions and Suggestions

At this stage, conclusions and suggestions are presented based on the results of the data evaluation carried out. The conclusion serves as an answer to the research objectives, derived from the interpretation of the data evaluation results. The suggestions convey improvement recommendations derived from the data-analysis findings.

III. RESULTS AND DISCUSSION

A. Data Collection and Processing

1) Respondent Data

Respondents in this usability evaluation were determined using the Slovin formula calculation, namely a minimum of 63 people. The required respondent criteria were:

1. Village/sub-district admins registered as active users or accessors of the Buku Pokok Pemakaman Application
2. Willing to participate in the study by filling out the questionnaire

2) Data Collection Implementation

Data collection was carried out from 16 March 2026 to 30 March 2026, with time and location adjusted to respondents' conditions. The data collection process was carried out online using a Google Form questionnaire. The number of respondents successfully collected was 112 people.

3) Task Scenario

Respondents participating in the test were given several task scenarios to complete.

TABLE V
TASK SCENARIO

Task Scenario 1	
Skenario	Steps
Login	1. Fill in the username and password fields 2. Click the Login button
Task Scenario 2	
Skenario	Steps
Change Password menu	1. Click the Change Password menu 2. Enter old password 3. Enter new password 4. Confirm new password 5. Click the "Change My Password" button
Task Scenario 3	
Scenario	Steps
Input menu	1. Click the Buku pemakaman menu 2. Click "Add Buku pemakaman" 3. Fill in ID number (NIK), name, address, date of death, death certificate number, death certificate date, death deed number, death deed date, remarks 4. Click the "Save" button
Task Scenario 4	
Scenario	Steps
Edit	1. Click the Edit menu 2. Select the data to be edited 3. Click the ID number (NIK) to edit 4. Edit the required data (e.g., name, address, date of death, etc.) 5. Click the Save button
Task Scenario 5	
Scenario	Steps
Search menu	1. Click the Cemetery Register menu 2. Enter a keyword (e.g., NIK, name, death deed number) 3. Click the Search button
Task Scenario 6	
Scenario	Steps
Export menu	1. Click the Cemetery Register menu 2. Filter the data to be exported 3. Click the Export menu 4. Select the desired file format (e.g., CSV, XLS, or XLSX) 5. Click the Export button
Task Scenario 7	
Scenario	Steps
Logout menu	1. Click the Log Out menu

B. Result Evaluation and Discussion

1) Description of Research Data

Respondent data collection was carried out from 16 March 2026 to 30 March 2026. During this period, data were obtained from 112 respondents registered as active users or accessors of the Buku Pokok Pemakaman Application. Each respondent gave their opinion and rating regarding their perception of the Buku Pokok Pemakaman application. In

addition, respondent characteristics were grouped by gender and age as well as by regional distribution.

The study respondents came from 17 sub-districts in Magetan Regency, totaling 112 respondents. By gender, 37.5% of respondents were female and 62.5% were male, indicating that this study was dominated by male respondents. By regional distribution, the sub-districts with the highest number of respondents included Plaosan Sub-district with 15 respondents, dominated by the 41–50-year age group with 6 people, and Kawedanan Sub-district with 11 respondents, mostly aged 41–50 with 4 people. In addition, Sukomoro and Panekan Sub-districts each had 10 respondents, mostly within the productive age range of 31–50 years. Other sub-districts had varying numbers of respondents, together making up the total of 112 respondents from 17 sub-districts. In terms of age distribution, 21.4% of respondents were aged 20–30, 37.5% were aged 31–40, 33.0% were aged 41–50, and 8% were aged over 50. Overall, the 31–40 age group was the largest, with 42 respondents (37.5%), followed by the 41–50 age group with 37 respondents (33.0%). This indicates that most users of the Cemetery Register Application are working-age employees with work experience, so they are expected to provide representative usability ratings.

2) Effectiveness Metric Evaluation Results

The effectiveness level in this study was measured based on respondents' success in completing the previously defined scenarios. Table VI presents the effectiveness measurement results obtained from 112 respondents based on the execution of the given tasks.

TABLE VI
EFFECTIVENESS TEST RESULTS

Test Status	Respondent Code	No. of Resp.
Successful	All except R16, R38, R41, R57, and R102	107
Failed	R16, R38, R41, R57, R102	5
Total	112 Respondents	112

Note:

R = Respondent

Observation during testing showed that these five respondents had difficulty following the application's usage flow and required guidance from the moderator to complete their tasks. In this study, each respondent was required to complete all test scenarios independently; therefore, tasks completed with the moderator's help were categorized as failed in terms of effectiveness. In addition, respondents who required the moderator's help tended to need more time to complete tasks than other respondents. The five respondents who experienced failure were aged 40–50 and above; however, the failure was not caused by age alone, but because these respondents could not complete the test scenario independently in accordance with the research procedure. The effectiveness level of the Buku Pokok Pemakaman Application in completing the tasks given to users was then calculated as follows.

$$SR = \left(\frac{S + (PX0,5)}{T} \right) \times 100\% \quad (5)$$

$$SR = \left(\frac{776 + (0 \times 0,5)}{784} \right) \times 100\%$$

$$SR = \left(\frac{776}{784} \right) \times 100\%$$

$$SR = 98,98\%$$

Note :

SR = Success Rate

S = Success

PS = Partial Success

T = Task

Based on the calculation using the success rate formula, a success level of 98.98% was obtained. This value, analyzed with reference to the 1991 Depdagri R&D Reference Standard, falls into the very effective category.

3) Efficiency Metric Evaluation Results

The method used to assess efficiency was to calculate the amount of time users needed to complete each given task until they succeeded, with TBE then calculated in seconds. Table VII presents the time data and TBE results from the sample respondent data.

TABLE VII
EFFICIENCY METRIC MEASUREMENT RESULTS

Code	T1	T2	T3	T4	T5	T6	T7	TBE
R1	10	30	50	30	10	5	5	0.098
R2	15	15	60	30	2	5	5	0.166
R3	15	30	80	45	11	5	5	0.090
R4	15	30	20	30	10	15	5	0.079
R5	10	30	70	45	11	5	4	0.092
R6	5	10	15	15	10	10	5	0.119
R7	15	20	80	30	11	5	2	0.118
R8	10	3	70	30	20	5	4	0.119
R9	30	60	300	300	30	30	10	0.029
R10	10	25	90	60	15	6	6	0.082
...								
R112	12	25	42	16	11	19	4	0.086
Average	15.45	34.58	99.78	53.32	20.01	16.80	5.41	0.121

Based on the Time-Based Efficiency calculation for each respondent, an efficiency value of 0.121 goals/sec was obtained, representing the average time needed by respondents to complete the given tasks.

4) Satisfaction Metric Evaluation Results

The satisfaction aspect was measured through user ratings using the System Usability Scale (SUS) questionnaire. Data collection was carried out by distributing an online questionnaire via Google Form. Each statement in the SUS questionnaire used a 1-to-5 Likert scale. The following is a portion of the score data obtained after applying the System Usability Scale (SUS) rules.

TABLE VIII
SUS SCORE CALCULATION RESULTS

Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Total
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Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Total
R1	3	1	3	1	3	1	3	1	3	1	50
R2	4	0	1	3	4	0	3	1	2	2	50
R3	3	0	3	4	1	0	4	1	4	1	52.5
R4	2	3	3	4	3	2	4	3	4	4	80
R5	4	4	4	4	4	4	4	4	4	4	100
R6	4	4	4	4	4	2	4	4	4	3	92.5
R7	2	3	3	4	3	2	4	3	4	4	80
R8	4	4	4	4	4	2	4	4	4	3	92.5
R9	3	2	3	2	3	2	3	3	2	2	62.5
R10	4	3	4	1	4	1	3	3	4	1	70
...											
R112	3	3	3	3	3	3	3	3	3	2	72.5

Table VIII presents a portion of the System Usability Scale (SUS) score data obtained from processing the questionnaires completed by buku pokok pemakaman application user respondents. Below is the SUS calculation for respondent R1.

$$SUS\ Score = ((P_1 - 1) + (5 - P_2) + (P_3 - 1) + (5 - P_4) + (P_5 - 1) + (5 - P_6) + (P_7 - 1) + (5 - P_8) + (P_9 - 1) + (5 - P_{10})) \times 2,5 \quad (6)$$

$$SUS\ Score = ((4 - 1) + (5 - 4) + (4 - 1) + (5 - 4) + (4 - 1) + (5 - 4) + (4 - 1) + (5 - 4) + (4 - 1) + (5 - 4)) \times 2,5$$

$$SUS\ Score = (3 + 1 + 3 + 1 + 3 + 1 + 3 + 1 + 3 + 1) \times 2,5$$

$$SUS\ Score = 20 \times 2,5$$

$$SUS\ Score = 50$$

Note :

P = Score result from the SUS statement

After calculation, respondent R1's SUS score was 50. Based on the SUS Score Percentile Rank table described previously, the average SUS score of 68.59 falls into Grade C. On the SUS rating scale shown in Fig. 2, a score of 68.59 falls within the Marginal (High Marginal) acceptability range, with an adjective rating of OK.

Thus, it can be concluded that the Buku Pokok Pemakaman Application at the Population and Civil Registration Office of Magetan Regency already has a fairly good level of usability and is acceptable to users. Nevertheless, several improvement recommendations are still needed to enhance the user experience so that, in future development, the application can reach a higher usability category.

5) Interview Evaluation Results

In the interview stage, data were collected using a Google Form distributed to respondents via a link.

A summary of the answers to the first interview question shows that most respondents felt fairly comfortable using the Buku Pokok Pemakaman Application. The answer to the second interview question showed that respondents felt there were no features that needed improvement in the Buku

Pokok Pemakaman Application to make it easier to use. The answer to the third interview question showed that the majority of respondents stated that the application's features were already good and easy to use, so no improvement was needed. The results of the fourth interview question are closely related to the results of the third question: where a respondent stated in the third question that certain features needed improvement, the fourth question captured the respondent's reasons why the feature needed improvement.

6) Analysis of the Relationship between Usability Metric Results and Interview Results

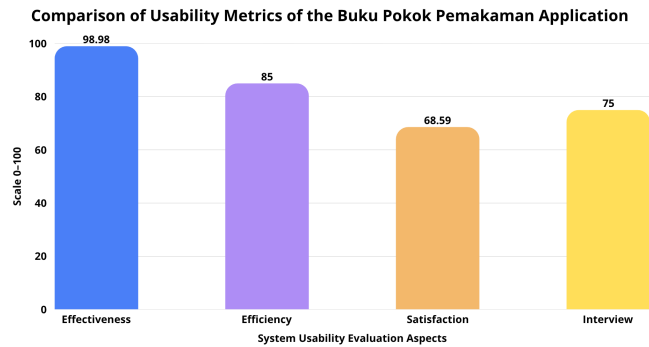


Fig. 3 Comparison of Usability Metrics and Interview Results

Based on the comparison of usability metrics (effectiveness, efficiency, user satisfaction, and interviews), all metrics are found to complement each other in evaluating the application's quality. Effectiveness obtained the highest score, 98.98% (very effective), while efficiency of 85 (0.121 goals/sec) indicates the system is fairly efficient. The SUS score of 68.59 falls into the fairly good category (Marginal – High), slightly above the benchmark of 68, but still needs improvement in ease of use and user experience. The interview results, scored at 75, indicate that users are fairly comfortable, although several obstacles were still found, such as the absence of an automatic account-saving feature, automatic address recording, and several shortcomings in the system's display and features. Overall, the application already performs very well in terms of effectiveness and efficiency, but still needs improvement in terms of user satisfaction.

C. Problem Findings

Based on the test results and interview analysis presented previously, several problems were found and summarized in the problem-findings table. The interface problem findings are summarized in Table IX.

TABLE IX
INTERFACE PROBLEM FINDINGS

No	Code	Problem	Source	Respondents
1.	M01	There is no automatic saving of username and password during login.	Interview	R17,R26,R30,R31,R33,R40,R44,R48,R59,R63,R66,R107
2.	M02	There is no delete menu. It	Interview	R22,R39,R112

		is difficult when duplicate data occurs		
3.	M03	There is no automatic recording of address input.	Interview	R29,R93,R93
4.	M04	There is no PDF filter option in the export menu.	Interview	R13,R99,R111
5.	M05	There is no logout confirmation feature before users exit the system to prevent errors during the logout process.	Interview	R74,R110

D. Improvement Recommendations

The improvement recommendations in this study were compiled based on the results of the previous analysis and discussion, obtained from testing and the interview questionnaire. The recommendations were made in the form of an application model based on guidelines.

1) Guidelines

The guidelines used for the system improvements refer to Google Material Design. The components used are described in Table X below.

TABLE X
GUIDELINES DESCRIPTION

Code	Guidelines
<i>Color</i>	
G1.1	Color functions to mark interactive elements and highlight elements considered important.
G1.2	Text and important elements need to be designed to maintain good readability on colored backgrounds.
<i>Typography</i>	
G2.1	The recommended font is Roboto.
G2.2	Button text size is set at 14px, using uppercase lettering.
G2.3	The font size for Subtitle 1 is in the range 18–24px.
<i>Iconography</i>	
G3.1	Icons must be designed to be easily recognizable and understandable at a glance.
G3.2	Icons must be clear and appropriate to their function so as not to cause confusion.
<i>Dialog</i>	
G4.1	Dialogs appear in response to user actions and convey relevant information.
G4.2	Dialogs must convey information directed at the user to support task completion.
<i>Layout</i>	

G5.1	Uses a clear and intuitive navigation menu for users.
G5.2	Layout maintains display consistency throughout the Buku Pokok Pemakaman Application.

2) Improvement Plan

The improvement plan was compiled based on the problems previously identified and grouped, and refers to the Google Material Design guidelines. Table XI shows the improvement plan below.

TABLE XI
IMPROVEMENT PLAN

Code	Problem	Plan	Guideline
M01	There is no automatic saving of username and password during login.	Add a "remember me" feature	G1.1, G1.2, G2.1, G2.2, G2.3, G3.1, G3.2, G5.1, G5.2
M02	There is no delete menu. It is difficult when duplicate data occurs	Add a delete menu	G1.1, G1.2, G2.1, G2.2, G2.3, G4.1, G4.2, G5.1, G5.2
M03	There is no automatic recording of address input.	Add a saved-address dropdown	G1.1, G1.2, G2.1, G2.2, G2.3, G3.1, G3.2, G5.1, G5.2
M04	There is no PDF filter option in the export menu.	Add a PDF option filter in the export menu	G1.1, G1.2, G2.1, G2.2, G2.3, G3.1, G3.2, G5.1, G5.2
M05	There is no logout confirmation feature before users exit the system to prevent errors during the logout process.	Add a logout confirmation feature before the user exits	G1.1, G1.2, G2.1, G2.2, G2.3, G3.1, G3.2, G4.1, G4.2, G5.1, G5.2

3) Recommendation Results

The improvement recommendations are represented in the form of mockups developed based on the previously compiled improvement plan and the established guidelines.

a. Adding a "remember me" feature on the login page

Based on the login menu display of the Cemetery Register Application shown in Fig. 4, the interface only provides fields for entering a username and password. In addition, there is no "remember me" feature to automatically save the user's login information.

The image shows a login form titled 'Buku Pemakaman'. It has a header bar with the title. Below the header, there are two input fields: 'Nama pengguna:' with the value 'yulinda' and 'Sandi:' with a masked password '*****'. A blue 'Masuk' button is at the bottom right.

Fig. 4 Login Menu before improvement

Fig. 5 shows the recommended front page, whose first section contains a welcome message for the Disdukcapil Magetan Regency online queue website, together with an explanation of the website.asan tentang website.

The image shows an improved login form titled 'Buku Pokok Pemakaman'. It has a header bar with the title. Below the header, there are two input fields: 'Nama Pengguna' with the placeholder 'Masukkan nama pengguna' and 'Kata Sandi' with the placeholder 'Masukkan kata sandi' and an eye icon. There is a checkbox labeled 'Ingat Akun Saya' and a blue 'Masuk' button at the bottom right.

Fig. 5 Login Menu after improvement

One of the changes implemented is the addition of a "remember me" ("Ingat Akun Saya") feature that allows the system to save the user's login information. This feature is expected to improve login efficiency, so users no longer need to contact the Dukcapil admin to retrieve account information when they have trouble logging in, and it provides more comfortable and convenient access to the application.

b. Adding a delete menu — change to the registration page

Based on the display of the Buku Pokok Pemakaman Application shown in Fig. 6, the page displays a list of buku pemakaman entries. However, this display does not yet include a feature for deleting previously entered data. As a result, if a user makes a mistake or accidentally enters incorrect data, that data cannot be deleted independently by the user. The colors used are adjusted to match the guidelines.

The image shows a form titled 'Buku Pokok Pemakaman' for a user named SUPARNA. It contains fields for 'Nik:', 'Nama:', 'Alamat:', 'Tgl meninggal:', 'Nomor surat kematian:', 'Tgl surat kematian:', 'Nomor akta kematian:', 'Tgl akta kematian:', and 'Keterangan:'. The 'Tgl meninggal:' field has a date picker set to 25/02/2026. The 'Tgl surat kematian:' field has a date picker set to 25/02/2026. The 'Tgl akta kematian:' field has a date picker set to 25/02/2026. The 'Keterangan:' field has the value 'sakit'. There are two buttons at the bottom: 'Detail dan tindakan tgl' and 'Detail dan tindakan tgl'.

Fig. 6 Cemetery register display before improvement

Fig. 7 shows a change to the Edit Data menu with the addition of a Delete menu, which functions to remove incorrect or previously entered data. When the user presses the Delete button, the system displays a confirmation pop-up dialog asking whether the data should really be deleted.

The image shows the same form as Fig. 6, but with a confirmation dialog box overlaid. The dialog box is titled 'Hapus Data?' and contains the text 'Anda yakin ingin menghapus data ini?'. There are two buttons in the dialog: 'Batal' and 'Hapus'. The 'Hapus' button is highlighted in red. The form behind the dialog shows the same data as Fig. 6.

Fig. 7 Display of the added delete menu after improvement

c. Adding a saved-address dropdown feature

The display in Fig. 8 shows that address entry is still done manually by the user. This requires users to type in the complete address information in full, which can lead to writing errors, inconsistent data formats, and a slower input process.

After improvement, as shown in Fig. 9, a saved-address dropdown feature was added to the address entry, making it easier for users to fill in data. With this feature, users no longer need to type the address manually from scratch, and can instead simply select from a list of addresses previously saved in the system.

SUPARNA

Nik:

3520091606650002

Nama:

SUPARNA

Alamat:

RT 4 RW 3 DESA BIBIS KEC. SUKOMORO KAB. MAGETAN

Tgl meninggal:

20-02-2026

Hari ini

Fig. 8 Address entry display before improvement

SUPARNA

Nik:

3520091606650002

Nama:

SUPARNA

Alamat :

KPR Bandarsari Raya Blok E4 No

KPR Bandarsari Raya Blok E4 No 4

KPR Bandarsari Raya Blok E4 No 5

KPR Bandarsari Raya Blok E4 No 6

KPR Bandarsari Raya Blok E4 No 7

KPR Bandarsari Raya Blok E4 No 8

KPR Bandarsari Raya Blok E4 No 9

KPR Bandarsari Raya Blok E4 No 10

KPR Bandarsari Raya Blok E4 No 11

KPR Bandarsari Raya Blok E4 No 12

KPR Bandarsari Raya Blok E4 No 13

Tgl meninggal:

20-02-2026

Hari ini

Fig. 9 Address entry display after improvement

d. Adding a PDF format option filter feature to the Export menu

Export

Format:

pdf

csv

xls

xlsx

tsv

ods

json

yaml

html

Fig. 10 Export Menu before improvement

Based on the export menu display shown in Fig. 10, the system only provides export options in CSV, XLS, XLSX, TSV, ODS, JSON, YAML, and HTML formats. This display does not yet offer additional options such as a filter feature or the option to export data to PDF format. As a result, users have limited choices when selecting a document format to suit their needs. Furthermore, the absence of a PDF export feature requires users to convert files manually, which is less efficient because it adds to document processing time and can create difficulties in data storage and distribution.

Export

Format:

pdf

csv

xls

xlsx

tsv

ods

json

yaml

html

SUBMIT

Fig. 11 Export Menu after improvement

NIK	Nama	Alamat	Tanggal Meninggal
3520184107610037	Gunawan	RT 05 RW 01 Desa Sidomulyo Kec. Sidorejo Kab. Magetan	2012-11-26
3520044410810001	RUSMINI	DUSUN GAMBIRAN RT 013 RW 008 DESA MADIGONDO KECAMATAN TAKERAN K	2012-11-15
3520166264120001	AZIZAH ULIN	RT 018 / 004	2012-08-08
3520114110130001	TUMENEM	RT 017 RW 002 DESA SURATMAJAN	2012-05-20
3520080107420189	SARIMUN	DUSUN METEGAL RT 002 RW 002	2012-05-12
352016070626000	BASAR	RT 011 / RW 04	2012-06-15
3520164107520148	ROMLAH	Des Mopsumo RT 0104 Kec Ngariboyo Kab Magetan	2012-02-19
3520161911490001	DARMO PAIR	BYD 6/3	2012-05-05
3520162810810002	PURNOJO	BYD 2/1	2012-07-23
3520160710570001	SUBANDI	BYD 4/2	2012-12-31
3520164107450001	MAMI	BYD 1/1	2012-09-22
3520164210130001	ATYUNDA HAR	BYD 2/1	2012-10-02
3520160107340030	Kami	Des Mopsumo RT 0702 Kec Ngariboyo Magetan	2012-12-15
3520164107520148	Romlah	Des Mopsumo RT 0104 Kec Ngariboyo Magetan	2012-02-19
-	Murah	Des Mopsumo RT 00100 Kec Ngariboyo Magetan	2012-08-31
-	Murah	Des Mopsumo RT 00100 Kec Ngariboyo Magetan	2012-08-31
3520164107350133	SAMNEM	BYD 3/1	2012-03-14
3520160710570001	SUBANDI	BYD 4/2	2012-12-31
352016010750011	PONO	DUKUH DANYANG RT 024 RW 004 DESA SELOTINATAH	2012-06-30

Fig. 12 PDF display after export

Based on the problems identified in the previous export menu, improvements were needed to increase flexibility and efficiency in the data export process. Development therefore added a PDF format option to the export menu, as shown in Fig. 11, to meet users' needs for more practical document management.

e. Adding a logout confirmation feature before the user exits

Based on the logout menu display in Fig. 13 before improvement, the system processed logout directly without showing a confirmation, which could cause users to accidentally exit the application and have to log in again.

SELAMAT DATANG, YULINDA. LIHAT SITUS / GANTI SANDI

KELUAR

Beranda

Keluar

Terima kasih untuk meluangkan waktu berkualitas dengan jaringan situs hari ini.

Masuk kembali

Fig. 13 Logout Menu before improvement

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After improvement, the system displays a confirmation message when the user presses the logout button, as shown in Fig. 14. This feature allows users to confirm or cancel the action, improving the comfort and efficiency of system use.

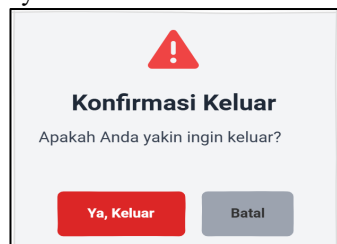


Fig. 14 Logout Menu after improvement

IV. CONCLUSION

This study concludes that the implementation of the Buku Pokok Pemakaman Application in support of Smart Governance has succeeded in improving ease of use, increasing the efficiency of data management, and supporting more effective public services within the Population and Civil Registration Office of Magetan Regency. Nevertheless, several improvements are still needed in terms of usability and system development so that the application's performance can be further optimized.

The evaluation results from 112 respondents show that the application has a very good level of effectiveness, with an Effectiveness value of 98.98%, and an efficiency of 0.121 goals/sec, indicating that users are able to complete tasks quickly. In addition, the average System Usability Scale (SUS) score of 68.59 falls into Grade C, with a Marginal (High Marginal) acceptance level and an OK Adjective Rating, indicating that the application has a fairly good level of usability and is acceptable to users, although improvement is still needed in terms of user experience.

Furthermore, through testing, interviews, and analysis, five improvement recommendations were produced to enhance system quality. These recommendations are presented as mockup designs referring to the Google Material Design guidelines, which are expected to serve as a reference for

further application development so that it is more optimal and better suited to user needs.

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