Jurnal Ilmiah Manajemen dan Bisnis
Volume 9, Number 2, 2024 pp. 133-144
P-ISSN: 2528-2077 E-ISSN: 2528-1208
Open Access: https://journal.undiknas.ac.id/index.php/manajemen/

The Impact of Mobile-Based Calendar Applications for Digitalizing Scheduling Management on Community Participation and Awareness in Traditional Villages

Luh Nik Oktarini [1*], I Kadek Andy Asmarajaya [2]
[1] Management Study Program, Universitas Hindu Indonesia, Denpasar, Indonesia
[2] Information System Study Program, Universitas Hindu Indonesia, Denpasar, Indonesia

ARTICLEINFO
Article history:
Received: 2024-05-22
Revised: 2024-08-11
Accepted: 2024-10-22
Available Online: 2024-12-25

Keywords:
Traditional Village; Management IS; Scheduling; Android

DOI:
https://doi.org/10.38043/jimb.v9i2.5563

ABSTRAK

This study aims to investigate the impact of implementing a mobile-based scheduling information system in the Desa Adat Tuban. The research focuses on enhancing information services provided by village officials, as well as increasing community participation and awareness. The methodology involves data collection through surveys and structured interviews, which are subsequently analyzed to assess the system's usability and effectiveness within the traditional village context. The system's usability score reached 64.2 percent, classified as "Good," though there is potential for further system refinement. The correlation between system implementation and service effectiveness reached 0.348, indicating that although a relationship exists, its influence remains limited. The system explains 12.11 percent of the variance in service effectiveness, highlighting the influence of external factors beyond the system itself. These findings emphasize the practical contribution of this system to traditional village management, underscoring areas where technological integration can support community engagement. From a managerial perspective, this study recommends mobile-based system implementation as an initial step, to be followed by feature adjustments based on user feedback and enhanced training to improve long-term effectiveness. The study further recommends prioritizing user feedback in future design iterations, regular usability testing, and training for village officials and community members to maximize system effectiveness. Additionally, collaboration with technology experts may assist in aligning system features with the unique cultural and operational context of the traditional village. In alignment with a focus on community-centered innovations, this study highlights the potential of mobile-based scheduling systems to transform information management in traditional village environments, dependent upon ongoing usability improvements and active community engagement.

1. INTRODUCTION

The communication within traditional villages must be enhanced in the digital era, as the information originating from these villages has become increasingly important due to the many villagers living abroad (Raharjana & Putra, 2020). The simplistic management of the traditional village results in a disruption of information flow among the surrounding community, leading to poor dissemination of important information (Mukhsin, 2020). Article 86, paragraph 2 of the Village Law states that the village government is obliged to develop a village information system and rural area development (Karimullah et al., 2022). The traditional method of disseminating information and organizing various important activities in the customary village has been maintained due to a lack of innovation. This has resulted in a non-centralized burden of information dissemination within the village, necessitating efforts from each family to distribute scheduling and information about events occurring in the village. This management condition within the customary village requires improvement with the assistance of technology (Huda et al., 2020).

While previous research has acknowledged the importance of technology in enhancing communication, there remains a significant gap regarding its specific role in traditional village management. Recent studies on information systems in community management have highlighted effective strategies for the digitalization of public services, emphasizing the need for integrated systems that facilitate real-time communication and resource management (Dahroni et al., 2023; Diab, 2021; Judice et al., 2021; Kartikasari et al., 2024; Lindner et al., 2021). In order to enhance the efficiency and productivity of traditional village officials, it is necessary to undertake meticulous planning, implement appropriate information technology, and allocate time and human resources effectively (Sanjaya et al., 2020). Addressing these broader management issues is crucial, as ineffective

* *Corresponding Author: First Author:* nik.oktarini@unhi.ac.id

communication not only hampers local governance but also limits the potential for community engagement and participation. Thus, the traditional village apparatus can perform their duties effectively and efficiently, and are able to provide the best services to the community (Ali & Saputra, 2020).

Traditional villages in Bali possess various unique characteristics that are encompassed within their management practices. It is imperative for these villages to disseminate information effectively and efficiently. Certain scheduling is determined by local cultural wisdom, such as the traditional Balinese calendar, which includes elements like *Wara, Wuku*, and *Sasih* (Ardiyasa, 2021). The condition of *Cuntaka* in the customary village is one of mourning, as well as celebration during events such as various *Panca Yadnya* ceremonies, whether conducted individually or by community groups. It is essential that these activities are effectively and centrally communicated (Saputra, 2022).

The development of a scheduling and management system for traditional villages is highly urgent. The need to provide information to expatriates from these traditional villages makes the information originating from there increasingly significant. The simplistic management of traditional villages often leads to an inability to disseminate information widely and efficiently (Dewi et al., 2023). The importance of preserving the continuity of traditions and activities in customary villages must be given due attention, as it encompasses the unique Balinese calendrical system. Unlike some traditional villages that may face limitations in technological infrastructure, such as internet connectivity or hardware that supports applications and websites, the Desa Adat Tuban is situated within an urban area, allowing for access to both technology and internet connectivity despite its traditional status.

An increased focus on the specific gap in research is necessary, as traditional village management often lacks the integration of modern technology to address broader management issues (Rawal et al., 2023; Ulatowska et al., 2023). An effective problem-solving approach to enhance communication and information management in traditional villages can be achieved through the implementation of a management information system integrated with digital technology. One potential solution is the development of mobile applications and websites connected to social media platforms (Holguín Torres et al., 2023; Navarrete et al., 2021).

To implement this solution, several steps should be taken. First, conduct a thorough analysis of the communication and information management needs in the traditional village and identify the challenges faced. Next, design and develop mobile applications and websites with user-friendly interfaces. These should include features such as event announcements, activity calendars, and information centers. Finally, provide training for village administrators and residents on how to use these applications and websites to ensure maximum adoption. Numerous studies on mobile-based community applications have been effectively implemented, particularly within health applications (Brewer et al., 2022; Rinawan et al., 2021; Wong et al., 2022), school applications (Manus et al., 2021), scavenger problem (Knearem et al., 2021), banking system (Chen et al., 2023), and various other sectors.

The benefits of implementing a village management information system through mobile applications and websites are significant. Firstly, it enhances accessibility for the community, including expatriates, allowing them to easily access up-to-date information on village activities and events. Secondly, the system facilitates the rapid and efficient dissemination of important information to all community members. Lastly, it reinforces local traditions and culture by promoting and strengthening cultural practices, such as the Balinese customary calendar, which serves as a medium for conservation.

This research will adopt the implementation of software using the Successive Approximation Model (Wolverton & Hollier, 2022). This model has been demonstrated effectively in several prior studies, showcasing its advantages in iterative development processes (Asmarajaya & Mahendra, 2023; Edeki, Fadugba, et al., 2022). By utilizing SAM, the research aims to refine the software based on continuous feedback, allowing for adjustments that meet user needs more effectively (Edeki, Udjor, et al., 2022; Petryshyn, 2023). Ultimately, this approach is expected to enhance the overall quality and usability of the software developed for the traditional village management system (Jung et al., 2019). In several previous studies, researchers have explored various aspects of managing traditional villages (Wardani & Sudiyani, 2017) . These studies have examined the unique challenges faced by these communities, including the preservation of cultural practices while integrating modern management techniques (Digita & Sanjaya, 2022).

Additionally, the findings have highlighted successful strategies for improving communication and resource allocation within traditional village settings (Darmaastawan et al., 2021). Overall, this body of research contributes valuable insights that can inform future efforts to enhance the effectiveness of traditional village management systems (Wisnawa, 2020). The testing of the developed system involves two key methodologies: black box testing and usability testing (Admojo & Saputra, 2022). Black box testing will focus on evaluating the system's functionality without any knowledge of its internal workings, ensuring that it meets specified requirements and performs as expected (Mahendra & Asmarajaya, 2022). On the other hand, usability testing will assess how user-friendly the system is, gathering feedback from actual users about their experience interacting with the interface (Ilyas et al., 2022). Together, these testing approaches will provide comprehensive insights into both the system's performance and its ease of use, guiding further improvements before final deployment (Fitriah

et al., 2022). The impact assessment is conducted quantitatively based on a questionnaire that will be distributed to system users.

This research offers a significant contribution to addressing complex issues related to enhancing communication and information management within traditional villages in the digital era. Notable aspects of the research include adopting an interdisciplinary approach that integrates information technology, management, and local culture. The development with SAM can be adapted to fit the unique context and needs of traditional villages. Additionally, the research provides important contributions to local community projects and presents a current review of approaches and methods in technology development for local communities.

2. METHOD

This research uses a research flow integrated with the Successive Approximation Model (SAM) framework. SAM was chosen due to its iterative approach, allowing for continuous feedback and adjustments throughout the development process, which is essential for tailoring solutions to the unique needs of traditional villages. This model not only facilitates the measurement of the impact of using the traditional village scheduling system application as the main research focus but also supports the creation of related applications while measuring their performance effectively.

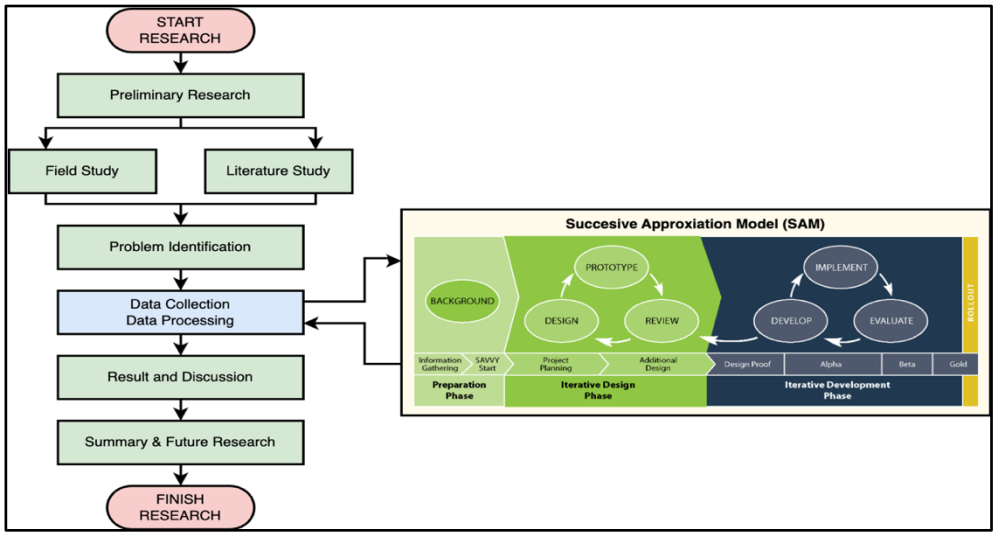

Figure 1. Research Flow Integrated with the Successive Approximation Model

In the preliminary research phase, a review of village management and information technology was conducted. Interviews with the village chief and community leaders were also held to understand their problems and hopes, as well as to gather insights about the challenges they face and their expectations for the development of information systems. In the field study phase, observations were made in the traditional village to understand communication and information management. Data collection using SAM involved structured interviews and focus group discussions (FGDs), ensuring a comprehensive understanding of community needs and system usability. The FGDs were structured to include a group of 12 participants, consisting of Desa Adat Tuban officials, with discussion points focused on problem identification. These FGDs were organized to obtain feedback from the community, leading to a field observation report that included a minimum of three active FGDs. The literature study phase examined scientific documents related to traditional village management and information systems that were searched and analyzed. Relevant policies and regulations were also reviewed. The achievement of this phase was a completed literature analysis with a deep understanding of the conceptual framework.

In the problem identification phase, a list of primary issues was compiled based on findings from the previous phases. The problems were classified according to their urgency and impact. The achievement of this phase was the identification of key issues and their prioritization. In the data collection and processing phase, research instruments were designed, and surveys were conducted in the Serangan Traditional Village. To determine the sample size, Slovin's formula was applied, ensuring that the sample accurately reflects the population's characteristics while minimizing potential sampling errors. Data collection was carried out using purposive sampling methods, which targeted specific community members who were most likely to provide

relevant insights. However, this method may introduce biases, as it relies on the subjective selection of participants, potentially overlooking diverse perspectives within the community. The achievement of this phase was the collected and analyzed survey data. Additionally, an application was developed to be used by the Desa Adat Tuban community, integrated with the Successive Approximation Model framework.

In the results analysis and discussion phase, the results of the prototype testing were analyzed, and user feedback was discussed. The findings and implications of the impact of using the information system were interpreted. The achievement of this phase was a completed results analysis and an approved plan for further development. The final phase consisted of conclusions and future research, which were compiled based on the analysis conducted. Recommendations for the development of traditional village information systems were provided.

3. RESULT AND DISCUSSION

Below are the results and discussion generated from this research based on the research stages that have been previously explained.

A. Preliminary Research, Field Study and Literature Study Result

This research focuses on the digitization of the scheduling management system in the Desa Adat Tuban, Badung, Bali, to enhance community participation. In the digital era, communication in traditional villages needs to be improved to reach the expatriate community that requires up-to-date information. The simple management of the village often results in information not being disseminated effectively, making the development of a more effective information system crucial. According to Article 86 paragraph 2 of the Village Law, village governments are required to develop village information systems.

Field observations were conducted to describe the communication and information management processes in the Desa Adat Tuban. It was found that communication in the village still relies on conventional methods, such as verbal announcements, which causes information not to always reach all community members. Interviews with village officials revealed perspectives on information management. Drs. I Wayan Mendra, M.Si., as the Bendesa, emphasized the importance of connecting the expatriate community with activities in the village. I Nyoman Jiwa, B.E.E., the Vice Bendesa, stated that conventional methods are ineffective and that innovation in information dissemination is greatly needed.

Overall, the interviews showed the agreement among village officials on the need for an integrated information system. Focus Group Discussions (FGD) with the village community resulted in recommendations for the digitization of the scheduling management system. Recommendations include the development of mobile applications and websites to integrate important information. Training for the community to use these technologies is also considered important.

A literature analysis was conducted to develop the conceptual framework of the research. It was found that digitizing the scheduling management system can enhance community participation and create systems that support two-way communication between village officials and the community. Findings from related policies indicate strong support for the development of information systems in villages, with the Village Law providing a legal basis for such development. This policy is expected to encourage traditional villages to adapt to technological advancements and improve communication within the community.

B. Problem Identification Result

In the context of developing the digitization of the scheduling management system in the Traditional Village using SAM, the identification of village information issues is crucial. One of the main problems is the lack of access to information. The community, especially those living away from home, has difficulty obtaining up-to-date information regarding activities and events in the village. Conventional methods of disseminating information, such as verbal announcements, are not effective in reaching all residents.

The lack of integrated information management results in a simplified management process. Important information is often disconnected and does not reach all segments of the community, reducing their participation. The lack of innovation in information dissemination is evident from the limited use of information technology. The community has not fully utilized digital platforms to obtain the information they need.

Training is necessary for village officials and the community to effectively use the applications. Without adequate training, users may not take advantage of the application's features. Community involvement in information management is essential to ensure that all information, including cultural activities, is accessible to the entire community.

Each of the above issues is analyzed to assess its impact on information management. The lack of access to information can lead to community dissatisfaction. Non-integrated information management has the potential

to create confusion among the community. With a focus on developing web-based and mobile applications, this research aims to improve access and information management in the Desa Adat Tuban.

C. Data Collection and Processing Result

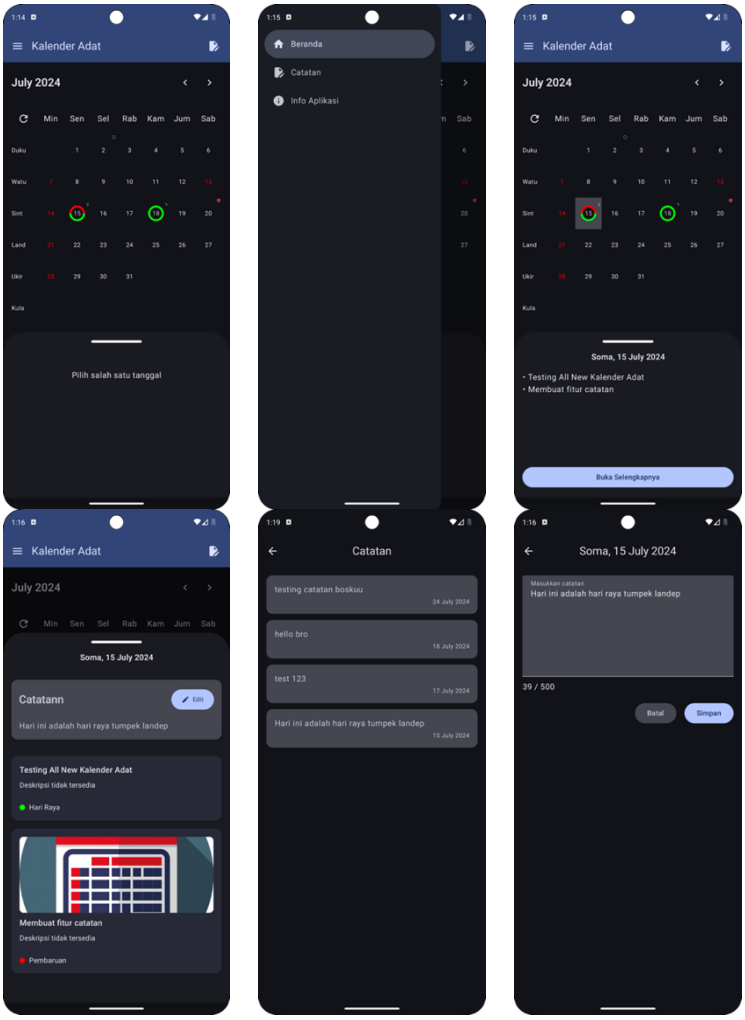

Figure 2. Implementation Result of the Desa Adat Tuban Scheduling System Based on Android

The results from the data collection and processing stage are integrated with the Successive Approximation Model, resulting in the Preparation Phase, Iterative Design Phase, and Iterative Development Phase. In the Preparation Phase, the main focus is on gathering information to support the development of the digitization of the scheduling management system in the Traditional Village using SAM. This aims to enhance community participation in the Desa Adat Tuban. Based on the previous identification of issues, the functional and non-functional requirements of the system can be determined. Functional requirements include access to the activity calendar, real-time activity announcements, problem reporting, and personal notes. Non-functional requirements include data security, application availability, usability, responsiveness, and system performance. Meeting these needs is expected to improve community participation.

In the Iterative Design Phase, the main focus is on designing the application. The process is conducted iteratively to ensure the application is effective and easy to use. The development team designs the user interface (UI) and user experience (UX) with consideration for ease of navigation. Key features are identified, and the application design must be responsive to be accessible across various devices. Once the design is complete, the team creates a prototype of the application. The prototype is tested by a group of users to provide feedback on usability. After testing, a review phase is conducted to analyze the feedback and make improvements.

In the Iterative Development Phase, the main focus is on technical development. The team builds the application based on the approved design. Coding is done using the selected programming language, and a database is built to store information. After development, internal testing is performed to ensure all features function

properly. Once development is complete, the application is ready for implementation. The implementation process includes user training, application launch, and technical support. Training is provided for village officials and the community to ensure they understand how to use the application. The application is launched and made accessible to the community. Technical support is provided after the launch to assist users who encounter difficulties.

D. Impact Evaluation

This research aims to evaluate the impact of the scheduling information system in the Desa Adat Tuban on the information services of village officials. To achieve this goal, two testing methods are used: usability testing and survey testing.

1. Usability Testing

Usability testing is conducted to measure how well the information system is accepted by the community. This method is important because it provides direct insights into user experience, including ease of use and user satisfaction with the system. The usability score of 64.2% is valuable; however, qualitative feedback is crucial for understanding why certain aspects, such as information presentation and layout, received lower ratings. For instance, users noted that while they found the system functional, the way information was presented could be confusing, leading to difficulties in locating specific details. By conducting this testing, researchers can identify areas that need improvement and ensure that the developed system truly meets the needs of the community. Usability testing involves a sample of heads of families from the Desa Adat Tuban who represent the target users to assess their comfort and satisfaction while using this application. Usability testing is one characteristic of ISO 25010 among other characteristics. The usability characteristic testing in this research is conducted using the J.R. Lewis questionnaire method, which contains 19 questions. Here is a summary of the questionnaire assessment by 85 respondents, based on Slovin's calculation for 554 heads of families with a margin of error of 10%, resulting in a minimum of 84.709 respondents.

Table 1. Questionaire Result for Usability Analysis

Resp	Question																		
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q12	Q16	Q17	Q18	Q19
R1	4	4	5	3	3	5	3	3	2	2	3	3	2	2	3	2	1	2	3
R2	4	3	2	4	3	3	4	4	3	3	3	3	2	2	3	5	2	3	3
R3	4	2	3	2	3	4	3	5	2	2	2	2	3	4	2	4	5	2	4
…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…
R83	3	3	2	5	2	4	4	5	2	3	4	3	4	3	1	5	2	2	3
R84	4	5	2	4	5	3	3	5	3	3	3	3	4	3	2	2	5	5	4
R85	4	2	3	5	4	5	3	4	3	3	4	3	4	2	5	3	3	2	3

Based on the usability calculations, the total score from the respondents is 5.188 out of an optimal score of 8.075, resulting in a usability percentage of 64.2%, which falls within the "Good" rating scale that ranges from 60-80%. However, this rating is still in the low cluster within the good category. The questions that received good ratings from respondents are question 1, which reached 82%, question 8, which reached 78%, and question 7, which reached 77%. Aspects that received low ratings from respondents are question 15, which reached 49%, question 18, which reached 50%, and statement 14, which reached 52%. The aspects of the effectiveness of information presentation, layout, and completeness of information are the main points of change that need to be addressed based on this research.

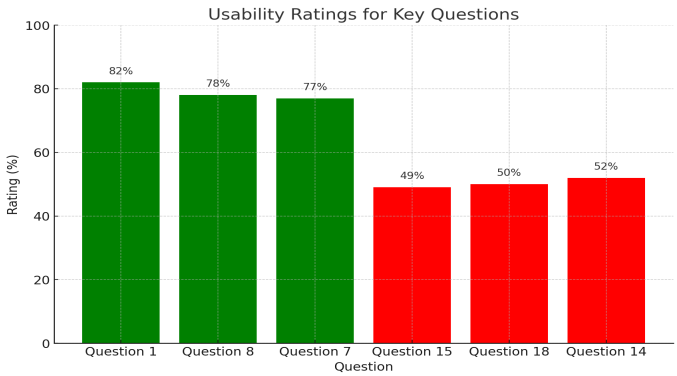

Figure 2. Usability Ratings of Key Questions in the Mobile-Based Scheduling Information System Evaluation

2. Survey Testing

In analyzing the extent of the impact of the implementation of the scheduling information system in the Desa Adat Tuban and the information services of village officials, the researcher conducted data quality testing (validity and reliability), followed by using simple linear regression, Pearson Product Moment correlation, and the coefficient of determination. To obtain the necessary data, the author distributed questionnaires to 85 respondents selected from the population of heads of families in the Desa Adat Tuban, based on Slovin's calculation for 554 heads of families in the Desa Adat Tuban, with a margin of error of 10%, resulting in a minimum of 84.709 respondents.

A) Simple Linear Regression Analysis

Table 2. ANOVA Test using Linear Regression

ANOVA[a]

Model		Sum of Squares	df	Mean Square	f	Sig.
1	Regression	19.815	1	19.815	11.464	.001[b]
	Residual	143.460	83	1.728		
	Total	163.275	84			

a. Dependent Variable: Traditional Village Services
b. Predictors: (Constant), Traditional Village Scheduling System

To determine whether the linear regression model is correct or not, we can use the ANOVA table from the data processing results in SPSS 29.0 for Mac.

- If the significance value < 0.05, then the linear regression model is correct and significant.
- If the significance value > 0.05, then the linear regression model is incorrect and not significant.

In the sig. column, a significant value of 0.01 is observed; since the significant value < 0.05, it can be concluded that the linear regression model is correct and significant.

Table 3. Coeffecients Test using Linear Regression

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	33.294	2.149		15.494	<.001
	Traditional Village Scheduling System	.146	.043	.348	3.386	.001

a. Dependent Variable: Traditional Village Services

The coefficient table provides the regression equation Y = 33.294 + 0.146X, which represents the relationship between the implementation of the scheduling information system (X) and the effectiveness of the information services of village officials (Y). In this equation, Y represents the effectiveness score of the information services of village officials; X represents the level of implementation or usage of the scheduling information system; 33.294 is the constant (intercept), meaning that even without the implementation of the scheduling information system (X = 0), the baseline score for the information services of village officials is 33.294; and 0.146 is the coefficient of X, indicating that for every unit increase in the implementation or usage of the scheduling information system, the score of information services improves by 0.146 points. The significance value of 0.01 confirms that the relationship between the variables is statistically significant, meaning the observed relationship is unlikely to be due to chance.

This analysis suggests that the scheduling information system has a positive but modest impact on the effectiveness of village officials' information services. While the increase of 0.146 points per unit is relatively small, it demonstrates that the adoption of the system is beginning to contribute to improvements. However, these results also highlight the need for further refinement and broader adoption of the system to achieve greater and more meaningful enhancements in service effectiveness.

B) Pearson Product Moment Correlation Analysis

The strength of the relationship between variable X and variable Y in this study is proven using Pearson Product Moment correlation analysis, as the author employs descriptive research methods and interval measurement scales. The Product Moment correlation analysis is used to measure the strength or weakness of the relationship and to prove the hypothesis regarding the relationship between the implementation of the scheduling information system in the Desa Adat Tuban and the information services of village officials.

Table 4. Correlation Result using Bivariate Correlation

Correlations			
		Traditional Village Scheduling System	Traditional Village Services
Traditional Village Scheduling System	Pearson Correlation	1	.348**
	Sig. (2-tailed)		.001
	N	85	85
Traditional Village Services	Pearson Correlation	.348**	1
	Sig. (2-tailed)	.001	
	N	85	85

**. Correlations is significant at the 0.01 level (2-tailed)

The output figure from the Pearson Product Moment correlation between the implementation of the scheduling information system in the Desa Adat Tuban and the information services of village officials yields a value of 0.348. This low correlation indicates that external factors, such as existing community engagement levels and the infrastructure for information dissemination, significantly impact the effectiveness of the new system. Addressing these external factors, such as enhancing community engagement through regular training and events, can improve the correlation between the system's implementation and the effectiveness of information services. The value of 0.348 indicates a low relationship between the two variables, while the positive sign (+) indicates that the greater the changes occurring in the implementation of the scheduling information system in the Desa Adat Tuban, the greater the changes in the information services of village officials, and vice versa. This relationship is termed a direct relationship. The correlation between the implementation of the web-based management information system and employee performance is significant for testing with a 10% error rate or a 90% confidence level.

C) Coefficient of Determination Analysis

To determine the extent of the impact of the implementation of the scheduling information system in the Desa Adat Tuban on the information services of village officials, a coefficient of determination analysis is conducted, using the following formula:

$$CoD = r^2 \times 100\%$$

$$CoD = (0{,}348)^2 \times 100\% = 12{,}11\%$$

Based on the calculation results, the coefficient of determination (CoD) is obtained at 12.11%. This figure indicates the extent of the impact of the implementation of the scheduling information system in the Desa Adat Tuban on the information services of village officials. Meanwhile, the remaining 87.89% is influenced by other factors.

D. Discussion

The discussion section of this research article evaluates the impact of the scheduling information system implemented in the Desa Adat Tuban, focusing on its effectiveness in enhancing information services provided by village officials. The findings from both usability testing and survey testing reveal critical insights into user experience and the overall functionality of the system. The usability testing indicated a 64.2% usability score, categorizing the system within the "Good" rating scale. However, this score warrants further explanation; qualitative feedback indicates that while users generally find the system usable, specific aspects such as information presentation and layout received notably lower ratings. Many users expressed frustration with the cluttered design and lack of intuitive navigation, which hindered their ability to find essential information quickly.

While this score reflects a generally positive reception, it also highlights areas for improvement, particularly in the effectiveness of information presentation and layout. Specific questions related to the completeness of information received notably lower ratings, suggesting that while users find the system usable, significant aspects require enhancement to fully meet community needs.

In terms of survey testing, the analysis demonstrated a low positive correlation (0.348) between the implementation of the scheduling information system and the information services of village officials. This correlation suggests that external factors may be influencing the overall effectiveness of the system. Factors such as varying levels of community engagement, existing communication practices, and the readiness of users to adopt new technology likely play significant roles in determining how well the system enhances information services. Further investigation revealed that the system's limited impact is particularly evident among residents living far from Desa Adat Tuban. Follow-up interviews with these residents indicate that many prefer to visit the village in person, often combining administrative tasks with family visits, rather than relying on the system. Additionally, residents still rely heavily on traditional communication methods, such as using WhatsApp or making direct phone calls to relatives, which are considered more familiar and practical for maintaining connections while ensuring cultural practices like *silaturahmi* or goodwill visit are upheld.

Despite its limitations, the Desa Adat Tuban Calendar has been recognized as a helpful tool for reminding users about cultural events and documenting traditional activities. However, its adoption as a primary communication method has been slow, as many residents still depend on conventional systems. As a result, the calendar currently serves more as an alternative rather than a primary system, requiring time and effort for broader community adoption. Addressing these challenges will require strategic outreach, such as increased socialization efforts and targeted communication campaigns, to highlight the system's unique benefits, particularly in urgent or time-sensitive scenarios. The coefficient of determination further indicates that only 12.11% of the variance in information services can be attributed to the new system, implying that other factors also play a substantial role in influencing service quality.

These findings underscore the importance of continuous improvement and user training to maximize the system's effectiveness. The low ratings in specific usability aspects indicate that the system may not fully address the needs of all community members, particularly those who rely heavily on accurate and timely information. Therefore, engaging with users to gather feedback and make iterative improvements is crucial. To address usability issues effectively, clear, actionable recommendations include providing comprehensive training sessions tailored to different user groups, enhancing the application's user interface based on feedback, and ensuring that ongoing support is available for users who encounter difficulties. While the discussion mentions external factors influencing effectiveness, it lacks a thorough analysis of these influences. Understanding how socio-economic factors, literacy levels, or technology access (such as smartphone availability and internet quality) impact system usability and user satisfaction would provide further insight.

Moreover, the modest correlation between the system's implementation and the enhancement of information services suggests that while technology can facilitate better communication, it is not a panacea. Other factors, such as community engagement, training, and the existing infrastructure for information dissemination, must be considered to achieve the desired outcomes. Future research should focus on exploring the underlying reasons for the low usability ratings in specific areas and how these can be addressed. Additionally, longitudinal studies could provide insights into how the system's impact evolves over time as users become more familiar with its features and functionalities. Engaging the community in the development process and providing ongoing support will be essential for fostering a culture of participation and ensuring that the scheduling information system effectively serves the needs of the Desa Adat Tuban. In conclusion, while the implementation of the scheduling information system represents a significant step towards improving information services in the Desa Adat Tuban, ongoing evaluation and adaptation are necessary to fully realize its potential benefits for the community.

4. CONCLUSION

The research on the scheduling information system in the Desa Adat Tuban reveals its impact on village officials' information services. The system received a usability rating of 64.2%, within the "Good" category, but closer to the lower end. Users appreciated accessibility and user interface design, yet improvements are needed in information presentation and completeness. A low positive correlation (0.348) was found between system implementation and service effectiveness, indicating limited current impact. Adopting technological solutions is crucial for traditional villages to improve communication and information management. However, success depends on addressing usability issues and enhancing user experience. Only 12.11% of the variance in information services is attributed to the system, suggesting significant external influences.

To foster ongoing improvements, clearer actionable recommendations for future system enhancements include conducting regular user feedback sessions and implementing iterative updates based on this feedback to

refine the application's features. Additionally, integrating advanced analytics into the system could help identify areas where users struggle, allowing for targeted improvements that directly address their needs. Prioritizing user feedback in the design process is essential, with regular usability testing to refine the application and address shortcomings. Training programs for officials and community members should enhance understanding and emphasize system benefits to encourage higher adoption rates. Collaboration with local technology experts could lead to integrating features that suit the cultural and operational contexts of the village. Recommendations for future research, especially through a longitudinal approach, are highly appropriate and add value to the discussion on digital transformation in village management. In conclusion, while the system has potential, its effectiveness relies on ongoing improvements and community feedback, fostering a more connected and efficient village.

5. ACKNOWLEDGE

Thank you, the author expresses gratitude to the Ministry of Education, Culture, Research and Technology, the Directorate General of Higher Education, Research and Technology, LLDIKTI Region 8, and Universitas Hindu Indonesia, which allowed the author to carry out the beginner lecturer research (Penelitian Dosen Pemula/ PDP) in 2024 with the decree number 110/E5/PG.02.00.PL/2024 and research contract number 2927/LL8/AL.04/2024; 001D-PDP/KPEN-LPPM/UNHI/VI/2024.

6. REFERENCES

Admojo, F. T., & Saputra, L. A. (2022). Analisis Sistem Keuangan Desa (SISKEUDes) di Kecamatan Muara Sugihan Menggunakan Metode Black Box Testing. *Jurnal Teknologi dan Informatika*, *12*(2), 141–152.

Ali, K., & Saputra, A. (2020). Tata Kelola Pemerintahan Desa Terhadap Peningkatan Pelayanan Publik Di Desa Pematang Johar. *Warta Dharmawangsa*, *14*(4), 602–614. https://doi.org/10.46576/wdw.v14i4.891

Ardiyasa, I. N. S. (2021). Ala Ayuning Dewasa dalam Usada Bali. *Prosiding Mistisme Nusantara Brahma Widya*, 134–138.

Asmarajaya, I. K. A., & Mahendra, G. S. (2023). Konservasi Wayang Kamasan dengan Permainan Jigsaw Puzzle pada Smartphone Android Menggunakan Successive Approximation Model. *Jurnal Teknologi dan Informatika*, *13*(2), 17–27.

Brewer, L. C., Jenkins, S., Hayes, S. N., Kumbamu, A., Jones, C., Burke, L. E., Cooper, L. A., & Patten, C. A. (2022). Community-Based, Cluster-Randomized Pilot Trial of a Cardiovascular Mobile Health Intervention: Preliminary Findings of the FAITH! Trial. *Circulation*, *146*(3), 175–190. https://doi.org/10.1161/CIRCULATIONAHA.122.059046

Chen, H., Chu, Y.-C., & Lai, F. (2023). Mobile time banking on blockchain system development for community elderly care. *Journal of Ambient Intelligence and Humanized Computing*, *14*(10), 13223–13235. https://doi.org/10.1007/s12652-022-03780-6

Dahroni, A., Pratama, M. F., Putra, R. I., & Palupiningsih, P. (2023). Android based service and management information system "Desa Citimun." *AIP Conference Proceedings*, *2510*(1), 040002. https://doi.org/10.1063/5.0128322

Darmaastawan, K., Oka Saputra, K., & Ary Esta Dewi Wirastuti, N. M. (2021). Optimasi Peran Desa Adat di Bali melalui Teknologi Informasi. *Majalah Ilmiah Teknologi Elektro*, *20*(1), 161. https://doi.org/10.24843/MITE.2021.v20i01.P19

Dewi, N. W. E. S., Cahyawati, P. N., Parameswara, A. A. G. A., & Permatananda, P. A. N. K. (2023). Penyuluhan Bahaya Hipertensi dan Pelatihan Branding Serta Strategi Pemasaran Kompos Di Rumah Kompos Desa Adat Padang Tegal, Ubud. *Jurnal Pengabdian Masyarakat Medika*, 133–139. https://doi.org/10.23917/jpmmedika.v3i2.2178

Diab, A. A. (2021). The appearance of community logics in management accounting and control: Evidence from an Egyptian sugar beet village. *Critical Perspectives on Accounting*, *79*, 102084. https://doi.org/10.1016/j.cpa.2019.04.005

Digita, I. D. K. L., & Sanjaya, K. O. (2022). Perancangan Sistem Informasi Analisa Kredit Berbasis Web Menggunakan Metode AHP (Studi Kasus: LPD Desa Adat Sumerta). *Jurnal Riset Sistem Informasi*, *1*(1), 10–20. https://doi.org/10.32795/resi.v1i1.2945

Edeki, S. O., Fadugba, S. E., Udjor, V. O., Ogundile, O. P., Dosunmu, D. A., Ugbenu, O., Akindele, N., Zelibe, S. C., Kehinde, T. O., & Jonah, B. A. (2022). Approximate-analytical solutions of the quadratic Logistic differential model via SAM. *Journal of Physics: Conference Series*, *2199*(1), 012004. https://doi.org/10.1088/1742-6596/2199/1/012004

Edeki, S. O., Udjor, V. O., Akinlabi, G. O., & Achudume, C. (2022). SAM approximate solutions of some evolution equations. *Journal of Physics: Conference Series*, *2199*(1), 012009. https://doi.org/10.1088/1742-6596/2199/1/012009

Fitriah, A. N., Hadisaputro, E. L., & Setyaningsih, E. (2022). Evaluasi Sistem Informasi Dapodik Pada SDN 023 Penajam Paser Utara Mengunakan Metode Usability Testing. *Jurnal Riset Komputer (JURIKOM)*, *9*(2), 456−463. https://doi.org/10.30865/jurikom.v9i2.4086

Holguín Torres, J. D., Sandoval Alarcón, L. C., & Cely Callejas, J. D. (2023). A Software for managing technical services offered by small ISPs in Colombia. *2023 IEEE International Humanitarian Technology Conference (IHTC)*, 1–7. https://doi.org/10.1109/IHTC58960.2023.10508889

Huda, H. A., Suwaryo, U., & Sagita, N. I. (2020). Pengembangan Desa Berbasis Smart Village (Studi Smart Governance Pada Pelayanan Prima Desa Talagasari Kabupaten Karawang). *Moderat: Jurnal Ilmiah Ilmu Pemerintahan*, *6*(3), Article 3. https://doi.org/10.25157/moderat.v6i3.3406

Ilyas, A., Wajid, S. H., & Muhammad, A. (2022). Usability Evaluation of E-Government Website: A Use of System Usability Scale. *Pakistan Journal of Engineering and Technology*, *5*(1), 11–15. https://doi.org/10.51846/vol5iss1pp11-15

Judice, A., Gordon, J., Abrams, J., & Irwin, K. (2021). Community Perceptions of Tree Risk and Management. *Land*, *10*(10), Article 10. https://doi.org/10.3390/land10101096

Jung, H., KIm, Y., Lee, H., & Shin, Y. (2019). Advanced Instructional Design for Successive E-Learning: Based on the Successive Approximation Model (SAM). *International Journal on E-Learning*, *18*(2), 191–204.

Karimullah, A., Maulany, R. R., & Amiruddin, M. (2022). Problematika Penerapan Sistem Informasi Desa (SID) di Indonesia. *Ma'mal: Jurnal Laboratorium Syariah Dan Hukum*, *3*(4), Article 4. https://doi.org/10.15642/mal.v3i4.134

Kartikasari, E. D., Zainuddin, S. A. B., & Jamil, A. B. (2024). Transformation of Accounting Information Systems in the Management of BUMDesa Financial Performance in the Digitalization Era. In R. Khamis & A. Buallay (Eds.), *Board Diversity and Corporate Governance* (pp. 537–543). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-53877-3_42

Knearem, T., Jo, J., Wang, X., & Carroll, J. M. (2021). Seek and Reflect: A Mobile Scavenger Hunt to Develop Community Engagement. *Proceedings of the 10th International Conference on Communities & Technologies - Wicked Problems in the Age of Tech*, 212–223. https://doi.org/10.1145/3461564.3461573

Lindner, R., Lückerath, D., Milde, K., Ullrich, O., Maresch, S., Peinhardt, K., Latinos, V., Hernantes, J., & Jaca, C. (2021). The Standardization Process as a Chance for Conceptual Refinement of a Disaster Risk Management Framework: The ARCH Project. *Sustainability*, *13*(21), Article 21. https://doi.org/10.3390/su132112276

Mahendra, G. S., & Asmarajaya, I. K. A. (2022). Evaluation Using Black Box Testing and System Usability Scale in the Kidung Sekar Madya Application. *Sinkron*, *7*(4), 2292–2302. https://doi.org/10.33395/sinkron.v7i4.11755

Manus, M., van der Linde, J., Kuper, H., Olinger, R., & Swanepoel, D. W. (2021). Community-Based Hearing and Vision Screening in Schools in Low-Income Communities Using Mobile Health Technologies. *Language, Speech, and Hearing Services in Schools*, *52*(2), 568–580. https://doi.org/10.1044/2020_LSHSS-20-00089

Mukhsin, M. (2020). Peranan Teknologi Informasi Dan Komunikasi Menerapkan Sistem Informasi Desa Dalam Publikasi Informasi Desa di Era Globalisasi. *TEKNOKOM*, *3*(1), Article 1. https://doi.org/10.31943/teknokom.v3i1.43

Navarrete, P. N., Lanuza, A. J. M., Gonato, J. R., Escoto, J. I. A., Caberte, V. J. E., & Jamis, M. N. (2021). Framework for the Development of Villboard: A Mobile and Web Management System for a Village. *2021 1st International Conference in Information and Computing Research (iCORE)*, 169–174. https://doi.org/10.1109/iCORE54267.2021.00049

Petryshyn, L. (2023). Model and Algorithm for Accelerated Analog-to-Digital Conversion based on the Additive Successive Approximation Method. *2023 13th International Conference on Advanced Computer Information Technologies (ACIT)*, 464–467. https://doi.org/10.1109/ACIT58437.2023.10275579

Raharjana, D. T., & Putra, H. S. A. (2020). Penguatan SDM dalam e-Marketing untuk Promosi Desa Wisata di Kabupaten Malang. *Jurnal Nasional Pariwisata*, *12*(2), Article 2. https://doi.org/10.22146/jnp.60403

Rawal, Y. S., Sinha, R., Mukherjee, S. K., & Batabyal, D. (2023). Exploring Culture and Heritage Through Experience Tourism. In *Https://services.igi-global.com/resolvedoi/resolve.aspx?doi=10.4018/978-1-6684-9957-3*. IGI Global. https://www.igi-global.com/book/exploring-culture-heritage-through-experience/www.igi-global.com/book/exploring-culture-heritage-through-experience/320819

Rinawan, F. R., Susanti, A. I., Amelia, I., Ardisasmita, M. N., Widarti, Dewi, R. K., Ferdian, D., Purnama, W. G., & Purbasari, A. (2021). Understanding Mobile Application Development and Implementation for Monitoring Posyandu Data in Indonesia: A 3-Year Hybrid Action Study to Build "A Bridge" From the

Community to the National Scale. *BMC Public Health*, *21*(1), 1024. https://doi.org/10.1186/s12889-021-11035-w

Sanjaya, P. K. A., Hartati, N. P. S., & Premayani, N. W. W. (2020). Pemberdayaan Pengelola Badan Usaha Milik Desa (BUMDes) Berdikari Melalui Implementasi Digital Marketing System. *CARADDE: Jurnal Pengabdian Kepada Masyarakat*, *3*(1), Article 1. https://doi.org/10.31960/caradde.v3i1.467

Saputra, I. W. (2022). Tata Susila Sembahyang Umat Hindu. *Metta : Jurnal Ilmu Multidisiplin*, *2*(3), Article 3. https://doi.org/10.37329/metta.v2i3.1773

Ulatowska, R., Wainio, E., & Pierzchała, M. (2023). Digital transformation in HRM of the modern business service sector in Finland and Poland. *Journal of Organizational Change Management*, *36*(7), 1180–1192. https://doi.org/10.1108/JOCM-11-2022-0339

Wardani, M. A., & Sudiyani, N. N. (2017). Analisis Kondisi Keuangan Pada Lembaga Perkreditan Desa (LPD) Desa Adat Penatih di Kecamatan Denpasar Timur. *Jurnal Manajemen dan Bisnis Equilibrium*, *3*(1), 36–42. https://doi.org/10.47329/jurnal_mbe.v3i1.361

Wisnawa, D. K. (2020). Implementasi Nilai-Nilai Tri Hita Karana dalam Atraksi Wisata di Pura Desa dan Puseh Desa Adat Batuan. *Pariwisata Budaya: Jurnal Ilmiah Pariwisata, Agama dan Budaya*, *5*(1), 13–29. https://doi.org/10.25078/pba.v5i1.1323

Wolverton, C., & Hollier, B. G. (2022). Guidelines for Incorporating Active Learning into the Design of Online Management Courses Utilizing the Successive Approximation Model (SAM). *International Journal of Education and Development Using Information and Communication Technology*, *18*(1), 264–274.

Wong, A. K. C., Wong, F. K. Y., Chow, K. K. S., Wong, S. M., Bayuo, J., & Ho, A. K. Y. (2022). Effect of a Mobile Health Application with Nurse Support on Quality of Life Among Community-Dwelling Older Adults in Hong Kong: A Randomized Clinical Trial. *JAMA Network Open*, *5*(11), e2241137. https://doi.org/10.1001/jamanetworkopen.2022.41137