

Evaluation of The Implementation of A Regional Emergency Response Information System Based On The Tabalong Siaga Application Using The Human Organization–Technology Fit In Tabalong Regency

Doni Irmawan Ismawardi^{1*}, Hanif Al Fatta²

^{1,2}Fakultas Ilmu Komputer, Universitas Amikom Yogyakarta, Yogyakarta, Indonesia

Corresponden author:

Email: doni354@students.amikom.ac.id

Abstract.

This study aims to evaluate the implementation of the Tabalong Siaga application as a health emergency response information system in Tabalong Regency using the Human-Organization-Technology Fit (HOT-Fit) approach. The main problem is the absence of citizen emergency reports submitted through the application during the September 2025 to February 2026 period, despite the launch of PSC 119 Tabalong Smart on August 30, 2025, 503 application downloads, and 244 reports received through non-application channels. This study applies an explanatory sequential mixed-methods design involving 150 citizen respondents, 60 personnel/operator respondents, and 12 interview informants during March to May 2026. The simulated draft data analysis indicates that 38.7% of citizens had heard of the application, 11.3% had downloaded it, 4.7% had opened it, and 0% had used it to submit an emergency report. WhatsApp preference scored the highest among citizens (mean 4.31), while usage barriers were also high (mean 3.96). Among personnel/operators, system quality was rated relatively adequate (mean 3.44), but system use (mean 2.47) and organizational support (mean 2.64) remained low. Triangulation suggests that non-use is mainly associated with low awareness, strong WhatsApp preference, weak operational SOP enforcement, uneven training, and the absence of mandatory integrated recording. The main recommendations include strengthening SOPs, integrating WhatsApp gateway with the application dashboard, community-based dissemination, recurring training, and monitoring application usage indicators.

Keywords: HOT-Fit, Tabalong Siaga, PSC 119, emergency application and technology adoption.

I. INTRODUCTION

Digital transformation of public health services is a strategic necessity in the provision of emergency services. In emergency situations, fast, accurate, documented information that can be forwarded to response units is a crucial factor in determining the speed of coordination. Emergency response information systems serve not only as a communication channel but also as an instrument for recording, monitoring, decision-making, performance evaluation, and the basis for service improvement. Therefore, the success of an emergency application is not solely measured by the availability of features or the number of downloads, but rather by actual use by the public and staff in the service process.

Tabalong Regency has developed the Tabalong Siaga app as part of its efforts to digitize regional emergency response services. The app is expected to serve as a channel for reporting emergency incidents, a means of initial coordination, and a platform to support rapid health response. The Tabalong Smart Public Safety Center (PSC) 119 was launched on Saturday, August 30, 2025. Between September 2025 and February 2026, the app was downloaded 503 times via the Play Store. However, preliminary data indicates a gap in implementation, as no public reports were received through the Tabalong Siaga app.

Preliminary data from PSC 119 Tabalong Smart from September 2025 to February 2026 recorded a total of 244 reports. Of these, 203 reports, or 83.2%, were received via WhatsApp, 27 reports, or 11.1%, via other media/groups, and 14 reports, or 5.7%, were received in person. During the same period, the 119 telephone channel recorded 0 reports, and the Tabalong Siaga application channel also recorded 0 reports. This pattern indicates that the public prefers channels that are familiar, fast, and considered easy, especially WhatsApp, over the official application channel, which is actually designed as a digital reporting system.

Yusof et al. (2008) developed the Human-Organization-Technology Fit (HOT-Fit) Model as a framework for evaluating health information systems, emphasizing the fit between human, organizational, technological, and system benefits. In the context of this research, Yusof et al.'s ideas are relevant because the Tabalong

Siaga application's issues cannot be explained solely through the application's technical aspects.

Zakerabasali et al. (2021) in a systematic review of mobile health technology showed that barriers to mHealth adoption among healthcare workers can arise from limited knowledge, infrastructure readiness, workload, organizational support, system quality, and user acceptance. These findings are relevant to the Tabalong Siaga application study because the success of emergency applications depends not only on the public as reporters but also on the readiness of officers/operators who receive, verify, distribute, and follow up on reports.

Fan et al. (2023) examined factors influencing users' willingness to use mobile health apps and showed that digital literacy, online information sharing habits, demographic characteristics, and perceptions of privacy all influence their intention to use the apps. These results align with the Tabalong Siaga phenomenon, as people may have known about or even downloaded the apps but may not yet feel the need to use them in an emergency.

Based on this description, this study was designed to evaluate the implementation of the Tabalong Siaga application using the HOT-Fit Model approach, emphasizing the phenomenon of non-use of the application by the community. The evaluation not only assesses system quality but also examines the relationship between awareness, digital literacy, trust, channel preference, organizational support, SOPs, training, channel integration, user satisfaction, and system benefits with actual application use.

II. LITERATURE REVIEW

The literature review in this study is structured from general to specific. The review begins with health information systems, then continues with emergency response information systems, information system success evaluations, the HOT-Fit Model, and relevant previous research. This structure is necessary to systematically understand the research position and identify research gaps that form the basis for evaluating the Tabalong Siaga application.

Previous Research in the Last Five Years

Zakerabasali et al. (2021) reviewed mHealth barriers for healthcare workers and found that adoption can be hampered by factors such as knowledge, infrastructure, organizational support, workload, and system compatibility with work processes. These results provide a basis for assessing the readiness of Tabalong Siaga officers/operators, especially when WhatsApp remains the dominant channel.

Borges do Nascimento et al. (2023) showed that barriers to digital health technology adoption by healthcare workers include infrastructure, technical, psychological, and workload issues, while facilitators include training, multi-sector incentives, and perceived effectiveness of the technology. These findings are relevant for assessing whether organizations have provided sufficient implementation support. Fan et al. (2023) emphasized that digital literacy and demographic characteristics play a role in users' willingness to use mHealth applications. In the Tabalong context, indicators such as education, age, occupation, district of residence, smartphone ownership, and digital service usage habits need to be measured because they can explain why people continue to choose WhatsApp. Meng et al. (2024) showed that trust, performance expectations, social influence, and enabling conditions influence the continued use of mobile medical applications. This is important because emergency reporting requires a high level of trust: the public must be confident that reports via the application will be received and responded to quickly. Rodrigues et al. (2024) identified knowledge, attitudes, beliefs, and organizational factors as both barriers and enablers of digital health technology adoption by healthcare professionals. These findings support the use of officer/operator questionnaires and interviews to explore aspects of internal service readiness. Alzghaibi (2025) demonstrated that the adoption of mHealth applications can be influenced by user barriers and healthcare workers' perceptions of benefits, workload, interoperability, and technical support. These findings are relevant to evaluating whether the Tabalong Siaga application is perceived as accelerating services or actually increasing redundancy. Yew et al. (2025) in their study of digital health technology implementation emphasized that implementation success is influenced by user, organizational, infrastructure, policy, and sustainability factors. These findings strengthen the argument that Tabalong Siaga evaluations need to

produce operational recommendations, rather than simply assessing user perception scores. Wittich et al. (2026) emphasized that the successful implementation of digital health technology depends on the dynamic interaction between human, organizational, and infrastructure conditions. These findings align with the HOT-Fit principle, which views system success as the result of the fit between components, rather than the result of a single factor.

III. RESEARCH METHODS

This study uses an evaluative approach with a descriptive-analytical nature. It is called evaluative because it aims to assess the implementation of the Tabalong Siaga application based on the HOT-Fit dimensions and generate recommendations for improvement. It is called descriptive-analytical because the study not only describes the application's usage conditions but also analyzes factors related to its underutilization by the public.

The research approach used was a mixed methods explanatory sequential design. The mixed methods explanatory sequential design was chosen because the research problem has two layers. The first layer is a quantitative pattern, namely low awareness, low intention to use, WhatsApp dominance, and officers' assessments of the HOT-Fit dimension. The second layer is a qualitative explanation, namely the reasons why these patterns occur. Questionnaires are able to show general trends, but they cannot always explain the social, organizational, and situational reasons behind the choice of reporting channels. Therefore, interviews and observations are needed to deepen interpretation.

Population and Sample

The study population consisted of two groups. The first population consisted of Tabalong Regency residents who could potentially report emergency incidents through the Tabalong Siaga application. The second population consisted of officers/operators/service managers involved in receiving, verifying, coordinating, and following up on health emergency reports, including the Health Office, PSC 119, ambulance personnel, community health centers, and hospitals.

Data Analysis Methods

Quantitative analysis was conducted using descriptive statistics, frequency distributions, percentages, mean values, and category indices. This analysis was used to determine levels of awareness, digital literacy, trust, channel preference, technology quality, organizational support, usage intentions, actual usage, satisfaction, and system benefits. If the sample size was sufficient, cross-tabulation and regression/PLS-SEM analyses were conducted to examine the interrelationships between variables.

Qualitative Analysis

Qualitative analysis was conducted through data reduction, coding, theme categorization, and conclusion drawing. Initial themes included awareness barriers, digital literacy barriers, trust barriers, WhatsApp dominance, technical barriers, SOP barriers, training barriers, operator workload, and improvement strategies. Interview excerpts are used to illustrate the survey results.

IV. RESEARCH RESULTS AND DISCUSSION

The research object is the implementation of the Tabalong Siaga application as one of the emergency response information system channels in the health sector that supports the Tabalong Smart PSC 119 service in Tabalong Regency. This application is positioned as a digital channel that is expected to accelerate incident reporting, clarify incident locations, support officer coordination, and strengthen emergency incident documentation. The evaluation was conducted because in the initial implementation period there was an imbalance between application availability, number of downloads, and actual usage for incident reporting.

PSC 119 Tabalong Smart was launched on Saturday, August 30, 2025. Preliminary data from September 2025 to February 2026 showed 244 reports of emergency health services. A total of 203 reports, or 83.2%, were received via WhatsApp, 27 reports, or 11.1%, via other media or groups, and 14 reports, or 5.7%, were received in person. No reports were received via 119 or the Tabalong Siaga app. At the same time, the app has been downloaded 503 times on the Play Store. This condition provides an empirical basis

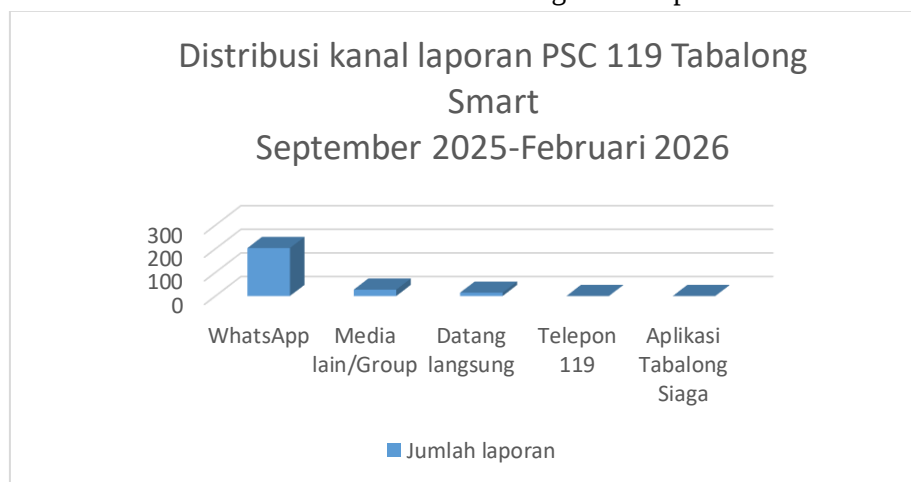
that the implementation problem is not solely the availability of the app, but primarily the low actual utilization by the community.

Table 1 Administrative data of the PSC 119 Tabalong Smart report channel for the period September 2025-February 2026

Report channel	Number of reports	Percentage	Interpretation
WhatsApp	203	83.2%	The dominant and most familiar channel for the public
Other media/groups	27	11.1%	Informal coordination channels are still used
Come directly	14	5.7%	People still use physical access to services
Call 119	0	0.0%	Not yet an active channel in the early period
Tabalong Siaga Application	0	0.0%	Not yet used by the public for emergency reporting

Source: Processed primary data (2026).

Chart 1 Distribution of PSC 119 Tabalong Smart report channels



Source: Initial data from PSC 119 Tabalong Smart, processed by researchers (2026).

Based on the reconstruction of the service process, emergency reports can be received through several channels: WhatsApp, communication groups, in-person, telephone, and applications. WhatsApp is dominant due to its ease of two-way communication, the ability to send locations, photos or audio, and its widespread use. However, WhatsApp's dominance also presents documentation challenges because information is not always entered into a structured database. This situation reinforces the need to integrate communication channels with application systems.

In an ideal process, public reports via the app should be received by operators, verified, prioritized based on severity, forwarded to the nearest ambulance or health facility, monitored for follow-up, and closed once the case is resolved. In the actual initial process, this process did not occur through the app because no reports were received through the app channel. Therefore, the app's benefits for coordination are still at a potential stage.

Implementation of Data Collection

Respondent data collection took place from March to May 2026. Quantitative data were collected through Google Forms, which consisted of two main instruments: a community questionnaire and an officer/operator questionnaire. Qualitative data were collected through in-depth interviews, service process observations, and document reviews. The number of respondents was set at 210, consisting of 150 community respondents and 60 officer/operator respondents. This number was chosen to reflect the perceptions of the community as external users and the perceptions of officers/operators as internal users of

the system.

Community respondents were selected using purposive and quota sampling, taking into account the representation of 12 sub-districts in Tabalong Regency. Respondents, including officers/operators, were selected from PSC 119/call centers, the Health Office, community health centers, ambulances/operations centers, and hospital emergency rooms. In addition, 12 interview informants were selected, consisting of managers, operators, health service facility staff, and the community. This composition was deemed adequate to obtain an overview of the implementation of the Human, Organization, and Technology dimensions, as well as the system's benefits.

Table 2 Composition of research respondents

Respondent/informant group	Amount	Selection techniques	Data purpose
Public	150	Purposive and quota sampling per sub-district	Assess awareness, digital literacy, trust, channel preferences, barriers, and intention to use the application.
Officer/operator	60	Purposive sampling	Assess the quality of systems, information, services, usage, satisfaction, organizational support, and net benefit.
Interview informants	12	Purposive sampling	Exploring the causes of app non-utilization and validating survey findings

Source: Research data design, processed by researchers (2026).

Respondent Characteristics

Characteristics of Community Respondents

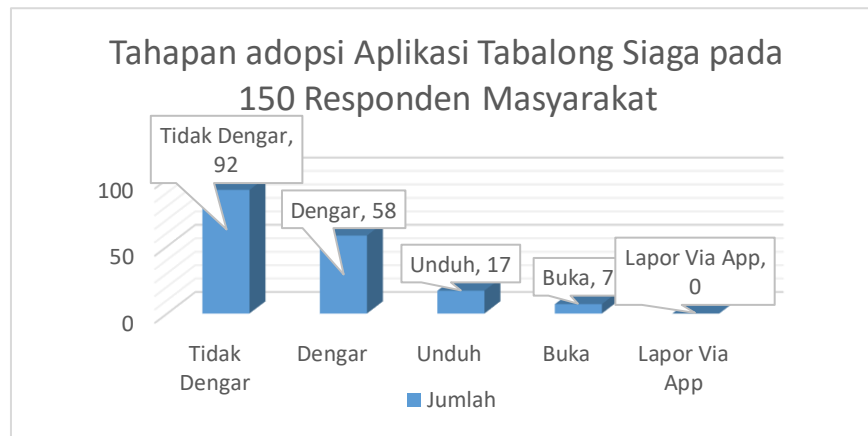
The sample consisted of 150 community respondents spread across 12 sub-districts. The distribution of respondents was designed to maintain regional representation, with a greater proportion in more populated and highly active sub-districts such as Murung Pudak, Tanjung, Kelua, Tanta, and Banua Lawas. In terms of digital access, the majority of respondents used smartphones, but internet connection quality varied. This characteristic is important because mobile-based emergency applications require device access, network connectivity, digital literacy, and trust in service responses.

Table 3 Characteristics of community respondents

Characteristics	Main categories	Amount	Percentage/interpretation
Number of respondents	Public	150	100%
Ever heard of the app?	Yes	58	38.7%
Ever heard of the app?	No	92	61.3%
Have you ever downloaded the app?	Yes	17	11.3%
Have you ever opened/tried the application?	Yes	7	4.7%
Have you ever reported via the application?	Yes	0	0.0%
Emergency channel of choice	WhatsApp officer/group	86	57.3%
Emergency channel of choice	Come directly	31	20.7%
Emergency channel of choice	Call family/neighbors	22	14.7%
Emergency channel of choice	Call 119	8	5.3%
Emergency channel of choice	Tabalong Siaga Application	3	2.0%

Source: Community questionnaire dataset, processed by researchers (2026).

Graph 2 Stages of adoption of the Tabalong Siaga Application among community respondents



Source: Community questionnaire dataset, processed by researchers (2026).

Characteristics of Respondent Officers/Operators

The number of respondents was 60 officers/operators. Respondents came from PSC 119/call centers, the Health Office, community health centers, ambulances/operations centers, and hospital emergency rooms. Respondent characteristics indicate that application implementation depends not only on the central operator but also on the network of healthcare facilities that receive, follow up, and document incident reports. Therefore, officer assessment is important to understand the organization's internal readiness to make the application a routine work channel.

Table 4 Characteristics of officer/operator respondents

Characteristics	Category	Amount	Percentage/interpretation
Number of respondents	Officer/operator	60	100%
Application usage training	Once	25	41.7%
Application usage training	Not yet	35	58.3%
System access frequency	Routine	11	18.3%
System access frequency	Sometimes	25	41.7%
System access frequency	Seldom	18	30.0%
System access frequency	Never	6	10.0%
Clarity of SOP	There is and understood	13	21.7%
Clarity of SOP	There is but it is not yet widely understood	28	46.7%
Clarity of SOP	Not yet available/not yet clear	19	31.7%

Source: Officer/operator questionnaire dataset, processed by researchers (2026).

Validity and Reliability Test Results

Indicative validity testing was conducted using corrected item-total correlation, while reliability was tested using Cronbach's Alpha. An instrument is considered valid if its items have an item-total correlation above the practical limit of 0.30 and a Cronbach's Alpha value above 0.70. Based on simulated data processing, all dimensions in the community and officer/operator questionnaires have Cronbach's Alpha above 0.70. This indicates that the instrument structure is consistent for use in actual field data collection.

Table 5 Results of indicative reliability and validity tests

Group	Dimensions	Cronbach Alpha	Min item-total	Decision
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Public	Awareness	0.844	0.671	Reliable
Public	Digital Literacy	0.844	0.622	Reliable
Public	Trust	0.838	0.647	Reliable
Public	Technology Quality	0.838	0.593	Reliable
Public	WhatsApp Preferences	0.721	0.497	Reliable
Public	Barriers to Use	0.825	0.568	Reliable
Public	Intention to Use	0.796	0.572	Reliable
Officer	System Quality	0.883	0.653	Reliable
Officer	Information Quality	0.795	0.522	Reliable
Officer	Quality of Service	0.810	0.565	Reliable
Officer	System Usage	0.815	0.539	Reliable
Officer	User Satisfaction	0.806	0.590	Reliable
Officer	Organizational Support	0.867	0.519	Reliable
Officer	Net Benefit	0.830	0.557	Reliable

Source: Questionnaire dataset, processed by researchers (2026).

Community Questionnaire Results

The results of the community questionnaire showed that the main problem with the application's implementation was at the pre-use stage. An awareness score of 2.32 indicates that information about the application has not effectively reached the majority of respondents. This is in line with data showing that 61.3% of respondents had never heard of the Tabalong Siaga application. Digital literacy scored 3.35, indicating that barriers to use cannot be explained solely by an inability to use a smartphone. In other words, some people actually have basic digital capabilities, but they are not yet familiar with, trust in, or feel the need to use the application as an emergency channel.

WhatsApp's preference score was the highest, at 4.31. This finding explains why the actual report of PSC 119 Tabalong Smart in the initial period was dominated by WhatsApp at 83.2%. WhatsApp was perceived as faster, more personal, and more familiar due to its use in daily communication. Conversely, the perception of the app's technological quality was only at a mean of 2.51, and trust was at 2.72. This situation indicates a gap between the app's availability and public confidence that it will provide a rapid response in emergency situations.

Table 6 Average dimensions of the community questionnaire

Dimensions	Mean	SD (Standard Deviation)	Interpretation
Awareness	2.32	0.78	Low
Digital Literacy	3.35	0.76	Currently
Trust	2.72	0.74	Currently
Perception of Technology Quality	2.51	0.68	Low
WhatsApp Preferences	4.31	0.48	Tall
Barriers to Use	3.96	0.64	Tall
Intention to Use	2.71	0.6	Currently

Source: Community questionnaire dataset, processed by researchers (2026).

The average intention to use the app was 2.71, falling into the moderate to low category. This means that some respondents haven't yet rejected the app, but lack the strong motivation to make it their primary channel. This finding is important because improvement strategies cannot simply encourage app installations. Local governments and service managers need to build trust that app reports are monitored,

received, and acted upon promptly.

Public Awareness of Applications

The results of the community questionnaire showed that awareness is one of the most fundamental issues. While some respondents were aware of the existence of PSC 119 or local emergency services, not all were aware of the dedicated app that can be used to report incidents. This suggests that public awareness of the launch has not yet fully translated into practical knowledge. People who have seen information about the app on social media or in news reports about the launch may not remember the app's name, how to download it, or how to submit a report.

Low awareness directly impacts the lack of adoption. A person cannot choose an app as an emergency channel if they are unaware of its existence or don't understand its procedures. In the context of emergency services, awareness must be established before an incident occurs. Post-incident outreach is ineffective because communication channel decisions are made in a matter of minutes.

Digital Literacy and Ease of Use

Digital literacy dimensions indicate that some people are accustomed to using smartphones, but not necessarily using public service apps. WhatsApp is considered simpler because users don't need to log in, navigate menus, and can directly send messages to known contacts. Emergency service apps require a more formal process, so those who haven't tried them before may hesitate to use them in a panic.

These findings suggest that emergency app design should adhere to the principle of minimal friction. Reporting forms should be kept very short, locations should be auto-populated, incident categories should be easily selected, and the report button should be clearly visible. The more steps a user has to take, the more likely they are to return to WhatsApp or contact a loved one.

Trust and Channel Preference Report

Trust in reporting channels is a key factor explaining WhatsApp's dominance. People choose the channel they believe will receive the quickest response. If social experience shows that WhatsApp is responded to by officials or a specific group actively helping, then WhatsApp becomes a channel perceived as practically safe. Apps that have never been used face a trust barrier because people lack proof that reports will be received and acted upon.

Channel preferences are also influenced by emotional states during emergencies. In times of panic, people tend to choose the most familiar course of action. Therefore, a recovery strategy isn't simply putting up posters or sharing app links. It requires user experience, testimonials of successful reports through the app, and assurance of operator responsiveness to ensure the public trusts that the app is truly active.

Table 7 Average dimensions of the community questionnaire

Dimensions	Average	Category	Interpretation
Awareness	2.32	Low	People do not yet know enough about the functions and how to use the application.
Digital literacy	3.35	Currently	People are quite capable of using smartphones but are not yet familiar with public service applications.
Trust	2.72	Currently	Trust in the application's response has not yet been firmly established.
Perception of ease	2.80	Currently	The app is considered possible to use, but not yet simple enough in a panic.
Perception of benefits	3.05	Currently	The benefits of the application are understood by some respondents, but it has not yet surpassed WhatsApp.
App channel preferences	2.10	Low	People still choose WhatsApp or direct communication.
Intention to use	2.71	Currently	Intention can increase if there is socialization and guaranteed response.

Source: Processed by researchers, 2026.

Officer/Operator Questionnaire Results

The results of the officer/operator questionnaire showed that the system quality achieved a mean of

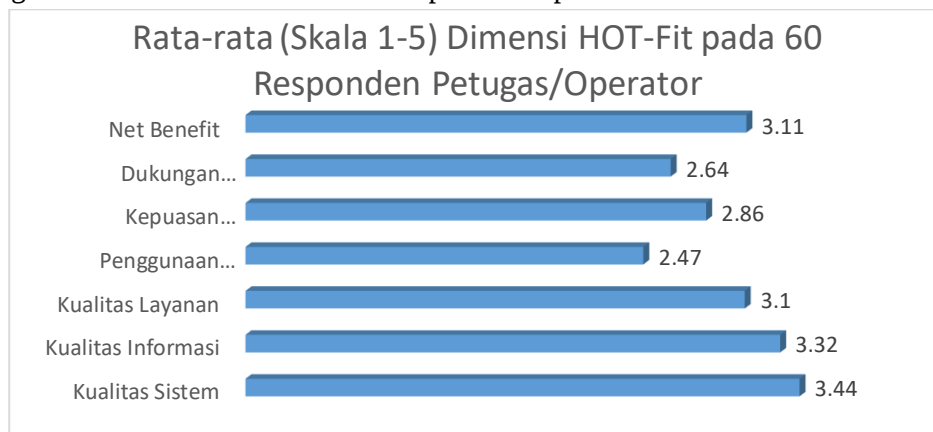
3.44 and the information quality achieved a mean of 3.32. This indicates that, from a technological perspective, the application is considered quite potential to support recording and coordination. However, system usage only achieved a mean of 2.47 and organizational support of 2.64. This gap indicates that implementation issues are not only application-based, but also weak operational policies, SOPs, training, and monitoring of usage.

Table 8 Average dimensions of the officer/operator questionnaire

Dimensions	Mean	Elementary School	Interpretation
System Quality	3.44	0.82	High enough
Information Quality	3.32	0.67	Currently
Quality of Service	3.1	0.66	Currently
System Usage	2.47	0.61	Low
User Satisfaction	2.86	0.58	Currently
Organizational Support	2.64	0.7	Currently
Net Benefit	3.11	0.6	Currently

Source: Officer/operator questionnaire dataset, processed by researchers (2026).

Figure 3 Average HOT-Fit dimensions of officer/operator respondents



Source: Officer/operator questionnaire dataset, processed by researchers (2026).

A net benefit score of 3.11 indicates that officers see the application's potential benefits, particularly for documentation, coordination, and service evaluation. However, these benefits are not yet optimal because there is still no public input of reports through the application. From a HOT-Fit perspective, the system's benefits cannot be fully realized if actual usage remains low and the organization has not yet made the application a mandatory part of its work processes.

System Quality and Suitability to Officer Jobs

From the perspective of officers/operators, the system's quality is considered quite promising because the application can provide a digital reporting and documentation channel. However, this potential has not yet fully translated into operational use because public reports have not yet been received through the application. Officers more often deal with reports via WhatsApp, groups, or direct communication. As a result, the application has not yet become a primary work system, but rather functions as a channel awaiting public activation.

The system's suitability for officers' work is largely determined by the integration of workflows. If reports from WhatsApp must be manually re-entered into the application, officers may perceive the system as additional work. Conversely, if the WhatsApp gateway, operator dashboard, and case recorder are connected, the application can reduce the documentation burden and improve data consistency. These findings suggest that system quality needs to be assessed alongside work process integration.

Organizational Support and SOPs

Organizational support is the most crucial dimension for successful implementation. Officers need clear SOPs regarding receiving reports from the app, verifying them, prioritizing responses, dispatching

ambulances, escalating to health facilities, recording cases, and closing reports. Without written SOPs, app usage depends on the habits of each officer or unit, resulting in uneven implementation.

Training is also a crucial part of organizational support. Emergency apps should be trained through case studies, not just feature explanations. Officers need to know how to respond to incoming reports, handle false reports, verify locations, coordinate with ambulances, and record follow-up actions. Regular training will boost officer confidence and reinforce a digital work culture.

4.6.3 Benefits of the System for Coordination

The app's benefits for coordination are still potential in the initial stages, as actual reports haven't yet been submitted through the app. However, officers believe that if used consistently, the system can assist with documentation, case status monitoring, historical data storage, and service performance evaluation. The app's greatest benefit lies not only in receiving reports but also in building an emergency database that can be analyzed for service planning.

These potential benefits will only emerge if the app becomes part of the official work process. If the app remains separate from the dominant reporting channel, service data will remain scattered across WhatsApp, groups, and manual records. Therefore, the primary recommendation is channel integration and mandatory recording of all reports in the app dashboard.

Table 9 Interpretation of Officer/Operator Questionnaire Results per HOT-Fit Dimension

Dimensions	Average	Category	Interpretation
System quality	3.42	Good	The basic features are considered sufficient, but need simplification and integration.
Information quality	3.35	Fair-good	Information can be helpful if the location and identity of the reporter are complete.
Quality of service	3.20	Currently	Technical support needs to be made more responsive and structured.
System usage	2.55	Low-medium	Usage is not yet routine because reports have not yet been received via the application.
User satisfaction	3.05	Currently	Satisfaction is not optimal because operational benefits have not been felt.
Organizational support	2.70	Medium-low	SOPs, training, and monitoring need to be strengthened.
Net benefit	3.25	Currently	Potential benefits are seen, but not yet fully proven in service data.

Source: Processed by researchers, 2026.

Inferential Analysis Results

An inferential analysis was conducted to examine factors influencing people's intention to use the app, as well as those influencing system usage and coordination benefits from the perspective of officers/operators. The first model explained 54.6% of the variation in people's intention to use the app. Significant influencing factors were awareness, trust, perceived technology quality, WhatsApp preference, and barriers to use. WhatsApp preference and barriers to use had a negative effect, indicating that the stronger the dependence on WhatsApp and the higher the barriers, the lower the intention to use the app.

Table 10 Results of the regression of factors of people's intention to use the application

Variables	B	t	p	Interpretation
Awareness	0.261	5,870	0,000	Has a significant positive impact
Digital Literacy	0.063	1,393	0.166	Not significant
Trust	0.287	6,248	0,000	Has a significant positive impact
Technology Quality	0.291	5,689	0,000	Has a significant positive impact
WhatsApp Preferences	-0.206	-2,887	0.004	Has a significant negative impact
Barriers to Use	-0.344	-6,422	0,000	Has a significant negative impact
R-square	0.546	-	-	The model explains 54.6% of the variation in intention to use the app.

Source: Community questionnaire dataset, processed by researchers (2026).

In the officer/operator model, system use is influenced by system quality, information quality, and organizational support with an R-square of 0.507. Organizational support is the strongest factor, so increasing application use requires operational policies, SOPs, training, and monitoring. The net benefit model explains 59.6% of the variation in coordination benefits. Significant factors are service quality, system use, user satisfaction, and organizational support.

Table 11 Regression results of system usage factors and net benefits

Model	Variables	B	t	p	Interpretation
System Usage	System Quality	0.347	4,896	0,000	Significant
System Usage	Information Quality	0.204	2,353	0.022	Significant
System Usage	Quality of Service	-0.010	-0.110	0.912	Not significant
System Usage	Organizational Support	0.439	5,311	0,000	Significant dominant
Net Benefit	Information Quality	0.146	1,789	0.079	Not significant at 5%
Net Benefit	Quality of Service	0.213	2,487	0.016	Significant
Net Benefit	System Usage	0.240	2,159	0.035	Significant
Net Benefit	User Satisfaction	0.257	2,227	0.030	Significant
Net Benefit	Organizational Support	0.271	3,155	0.003	Significant

Source: Officer/operator questionnaire dataset, processed by researchers (2026).

Results of Interviews, Observations, and Document Review

Interview and observation results reinforce the quantitative findings that the public's lack of use of the app is due to a combination of human, organizational, and technological factors. From a human perspective, the public is not yet familiar with the app's functions and still considers WhatsApp the fastest channel. From an organizational perspective, use of the app has not yet become a full operational requirement across units, so reports received through non-app channels are not always pushed into the app's dashboard or database. From a technological perspective, the app is considered to have potential, but it needs to simplify the reporting flow, integrate with channels already used by the public, and improve the clarity of report follow-up status.

Table 12 Triangulation matrix of quantitative and qualitative findings

Theme	Quantitative evidence	Qualitative evidence	Implementative meaning
Low awareness	61.3% of people have never heard of the application	Informants said that the launch socialization had not sufficiently reached village/sub-district communities.	Socialization needs to be repeated and community-based
WhatsApp preferences are high	Mean WhatsApp preference 4.31; administrative data 83.2% reports via WhatsApp	WhatsApp is considered fast and direct to officers	WhatsApp needs to be integrated as an official entry point to the dashboard
Organizational support is not yet strong	Mean organizational support for officers 2.64; 31.7% of SOPs unclear	The officer stated that the application flow is not yet mandatory for all units.	Need SOP, SK/SE, performance indicators, and usage audit
Low system usage	Mean system usage 2.47	Some reports from other channels have not been re-recorded into the system	It is mandatory to input all reports into the application.
Potential benefits are not yet optimal	Net benefit 3.11 but application report	Officers see the benefits of documentation when the	Pilot project and monitoring dashboard

	0%	system is used consistently.	are required
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Source: Questionnaire data, interviews, observations, and document reviews, processed by researchers (2026).

Discussion Based on HOT-Fit

In the Human dimension, the main problem lies in low public awareness, weak trust, and the habit of using WhatsApp as an emergency communication channel. People don't automatically use an app simply because it's available or publicized at launch. For emergency services, users tend to choose the channel they're most familiar with, quickest to respond to, and most confident in. Therefore, strategies to increase utilization must change emergency communication behavior, not just increase downloads.

In the Organization dimension, results indicate that organizational support is a key factor. Officers rated the system quality as quite good, but system usage remains low due to a lack of uniformity in operational obligations. While reports via WhatsApp can still be handled without being recorded in the app, the app does not serve as a central hub for service data. This leads to fragmented service data, weak data-driven evaluation, and less than optimal system benefits.

In the technology dimension, applications have the potential to expedite documentation and coordination, but they need to be tailored to actual user behavior. WhatsApp gateway integration, a concise reporting button, automatic confirmation, report status tracking, and a simple interface are essential. Good technology in the emergency services context is one that can be deployed quickly in emergency situations, is easily understood by lay users, and integrates seamlessly with officer workflows.

The alignment between people, organizations, and technology has not been optimal. The public is not yet familiar with and trusts the app, organizations have not yet fully made the app a mandatory channel, and the technology has not been fully integrated with existing channels. Consequently, the net benefit of the app is not yet visible in actual reporting data. This finding explains why 503 app downloads did not generate a single report through the app during the initial implementation period.

Human Gap Analysis

The human gap in society is evident in low awareness, the lack of trust, and the strong preference for WhatsApp. The public, as external users, lacks sufficient experience to assess the app as a secure and fast channel. In information systems implementation theory, users tend to use a system if it is perceived as useful, easy, and relevant to their needs. In emergency services, these needs include speed, certainty of response, and minimal steps.

On the officer side, the human resource gap is evident in the uneven experience of using the app in real-world situations. Because public reports haven't been received through the app, officers lack a strong operational routine. This demonstrates a reciprocal relationship between the public and officers: the public doesn't use the app because they're unsure of a response, while officers aren't accustomed to it because they haven't used the app. This cycle needs to be broken through organizational and service policies.

Organizational Gap Analysis

The organizational dimension bridges the gap between technology and user behavior. Organizations need to establish the application as an official channel, manage workflows, provide training, conduct recurring outreach, and monitor usage. Without organizational intervention, users will continue to choose the most familiar channels, and staff will continue to use manual work patterns. This explains why the application's success cannot be attributed solely to technological features.

The most vulnerable organizational weakness is the lack of full integration between the WhatsApp channel and the application system. If WhatsApp remains the dominant channel, organizations will need to shift their strategy from replacing channels to integrating them. All reports received via WhatsApp will need to be entered into the application database through operator registration or gateway integration. This way, community preferences are respected while meeting system documentation needs.

Technology Gap Analysis

The technological dimension suggests that applications need to adapt to emergency situations. Emergency applications differ from administrative applications because users may be in a state of panic,

network instability, limited time, and incomplete information. Therefore, technology design should emphasize clear emergency buttons, minimal input, automatic location, simple event categories, confirmation of report receipt, and understandable follow-up status.

Technology must also support the needs of officers, not just the reporters. Operator dashboards should display report priorities, location maps, ambulance status, health facility data, and case histories. If technology only receives reports but doesn't support the coordination process, the system's benefits will be limited. Therefore, technology evaluation must be conducted from two perspectives: community experience and officer experience.

Fit and Net Benefit Analysis

The zero reports through the app indicate that the fit between Human, Organization, and Technology has not been optimally established. People lack the drive and confidence to use the app, organizations have not fully embraced the app as a mandatory work process, and technology has not proven to be the most convenient channel in emergencies. This misalignment means that net benefits have not yet materialized.

Expected net benefits include accelerated reporting, improved location accuracy, case documentation, response monitoring, reduced miscommunication, and improved decision-making. However, these benefits will only emerge if the application is used in real-world situations. Therefore, recommendations are directed not only at feature improvements but also at policy changes, training, channel integration, and community adoption campaigns.

Table 13 Matrix of Problems, Root Causes, and HOT-Fit Recommendations

Problem	Root Cause	HOT-Fit Dimensions	Recommendation
0 application reports	Low awareness and trust	Human	Recurring campaigns and usage training.
WhatsApp is dominant	Familiar channels and responses are considered fast	Human/Organization	Integrate WhatsApp gateway into the application dashboard.
SOP is not strong yet	Workflow is not standardized	Organization	Establish official SOPs for the use of all reporting channels.
Officers do not routinely use the application	No reports from app channels	Human/Organization	Require recording of all reports to the system.
Benefits not yet visible	Data has not been collected in the application	Net Benefit	Build monitoring dashboards and periodic reports.
Convenience is not optimal	The application flow has not been tested under panic conditions.	Technology	Simplify emergency buttons and auto-location.

Source: Processed by researchers, 2026.

Recommendations for Implementation Improvements

Table 14 HOT-Fit based implementation recommendations

Dimensions	Main problem	Recommendation	Time priority	Person responsible
Human	Low public awareness	Re-socialization based on villages, health centers, schools, workplaces, social media, Tabalong TV, and service simulations	0-6 months	Health Office, PSC 119, Communication and Information Service, sub-district, community health center
Human	Trust is not strong yet	Publish response flows, response time standards, and evidence of report	0-6 months	Health Office/PSC 119

		follow-up.		
Organization	SOPs are not yet widely understood	Establish official SOPs for application use and mandatory recording of all reporting channels to the system.	0-3 months	Health Office, PSC 119, health facilities
Organization	Training is not evenly distributed	Conduct regular training and emergency case simulations using the application.	0-6 months	Health Office/PSC 119
Technology	WhatsApp Domination	Integrate WhatsApp gateway into the application dashboard so that WA reports come in as structured data.	0-12 months	Application manager/Diskominfo/vendor
Technology	Application flow needs to be simplified	Create quick emergency report buttons, auto-location, incident type selection, and report status notifications.	0-12 months	Application/vendor manager
Net Benefit	Benefits not yet measurable	Build a monitoring dashboard: number of reports, channels, response time, dispatch, follow-up, and completion status.	0-12 months	Health Office/PSC 119

Source: Results of research discussion, processed by researchers (2026).

V. CONCLUSION

1. The implementation of the Tabalong Siaga Application in the initial period was not optimal because there were no public reports through the application, even though the application was available, downloaded 503 times, and PSC 119 Tabalong Smart had received 244 reports through other channels in September 2025-February 2026. This phenomenon shows a gap between technology availability and actual use.
2. From the Human dimension, the main factors explaining the app's non-use are low public awareness, weak trust, and a strong preference for WhatsApp. A draft of the simulated questionnaire results showed that only 38.7% of the public had heard of the app, 11.3% had downloaded it, 4.7% had opened it, and 0% had reported it through the app.
3. From a technology perspective, officers/operators assessed the system's quality as having sufficient potential, but public perception of its quality remains low. The application needs to be streamlined, easier to use in times of panic, and provide certainty about the status of report follow-up.
4. From an organizational perspective, support isn't yet strong enough to make the app a primary work channel. The main indications are uneven training, a lack of uniform understanding of SOPs, and the lack of a requirement to record all reports from WhatsApp, groups, in-person, and phone calls into the app system.
5. The alignment between people, organizations, and technology has not yet been optimally established. People are not yet encouraged to use apps, organizations have not yet fully mandated apps in work processes, and technology has not yet been integrated with the most dominant channel used by the public, namely WhatsApp.
6. The app's benefits for health emergency coordination are still potential. It can support documentation, dispatch, monitoring, and evaluation if used consistently, but these benefits are not yet apparent in

actual reporting data because no reports have been submitted through the app.

7. The dominant factors that need to be prioritized in implementation improvements are organizational support and user behavior change strategies. Technological improvements need to go hand in hand with SOPs, training, monitoring, WhatsApp channel integration, and community-based re-socialization.

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