Acceptance Analysis of Silacak Version 3.0 Based on The Technology Acceptance Model (TAM) in Surabaya City

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Abstract. Tracing is one of the points in 3T that is highlighted in the Covid-19 response. This tracing activity is very important because confirmed cases can transmit the disease from 2 days before to 14 days after the onset of symptoms. In November 2020 the Ministry of Health created an information system to strengthen the surveillance system in tackling Covid-19, especially in contact tracing activities called Silacak. This study aims to analyze the acceptance of the Silacak version 3.0 application based on the Technology Acceptance Model (TAM) theory at the Surabaya City Primary Health Care. This research method is descriptive quantitative with a cross sectional approach. The sample in this study were tracing officers at the Surabaya City Primary Health Care with a total of 55 respondents. The sampling technique used was cluster random sampling. Data analysis in the form of univariate analysis. The results showed that perceived convenience was in good criteria (100%), perceived usefulness in good criteria (92.7%) and in sufficient criteria (7.3%), user attitudes in good criteria (94.5%) and in sufficient criteria (5.5%), behavioral interest in good criteria (100%). The conclusion of this study is that the acceptance of the Silacak application in Covid-19 contact tracing activities based on the technology acceptance model (TAM) theory in Surabaya City is considered good. Which means that tracing officers have accepted the Silacak application well to assist in contact tracing activities. To maintain good acceptance of the Silacak application, it is hoped that the development of the Silacak application will continue to be carried out so as to minimize the occurrence of system errors.

1 Introduction

The Covid-19 pandemic wave has entered Indonesia with the reporting of cases on March 2, 2020. Cases are increasing and spreading rapidly in all provinces in Indonesia, including East Java. Based on data obtained from the Covid-19 task force page, there was a national spike in cases from June to August 2021. There were 356,569 cases in June, 1,231,386 cases

in July, and 608,143 cases in August. The page also explains that East Java Province is ranked in the top 5 highest Covid-19 cases per-Province in Indonesia [1]. Pandemic management in Indonesia focuses on 3M and 3T. 3M activities must be carried out by the community to break the chain of Covid-19 transmission. Meanwhile, 3T is ideally carried out by the central government, local governments, health workers, regional apparatus organizations, and cadres in the community itself. One of the points in 3T that is highlighted in the handling of Covid-19 is tracing. This tracing activity is very important because confirmed cases can transmit the disease from 2 days before to 14 days after the onset of symptoms [2].

Based on the Decree of the Indonesian Minister of Health Number Hk.01.07/Menkes/4641/2021, tracing is carried out by the primary health care and its network of close contacts of confirmed positive cases of Covid-19. The implementation of contact tracing, primary health care and its networks can involve tracers from health and non-health workers. Non-health tracers come from cadres, TNI and POLRI or other community components who have received on-the-job-training from the Puskesmas [3]. In the current situation, the use of information systems is needed to assist in disease recording and reporting activities. The information system is a very important communication medium in Covid-19 prevention activities. Therefore, in November 2020 the Ministry of Health created an information system to strengthen the surveillance system in the Covid-19 response, especially in contact tracing activities called Silacak. Silacak is a website-based information system used for contact tracing, data analysis, and daily monitoring of close contacts at the health center and district/city level [4]. This digital contact tracing is a sustainable step that can reduce the level of Covid-19 transmission.

The high number of Covid-19 confirmation cases in Surabaya, which was recorded at 67,032 cases in December 2021 and is the highest case in East Java, this Silacak application is needed to assist with tracing activities. The Silacak application, which is relatively new, definitely has advantages and disadvantages in terms of acceptance of its implementation. Information system acceptance analysis has many behavioral models, one of which is the Technology Acceptance Model (TAM). The Technology Acceptance Model (TAM) is a model developed by Davis to explain the acceptance of technology used by technology users. Based on previous research related to the acceptance analysis of the Silacak application based on TAM theory, the results show that in the perceived usefulness variable, the indicators that have not been fulfilled are helping work faster and increasing work productivity, while the indicator on perceived convenience that has not been fulfilled is the ease of controlling the system. In addition, the old version of the Silacak application has not been connected to Disdukcapil data, which results in users having to fill in data manually, thus slowing down the administrative process of recording and reporting Covid-19 cases.

Research related to the acceptance analysis of the latest version of the Silacak application has never been done before in Surabaya City. Seeing these problems, researchers are interested in conducting research with the aim of analyzing the acceptance of the Silacak application in Covid-19 tracing activities based on the technology acceptance model (TAM) theory in Surabaya City. So that it can be used as an evaluation material regarding its implementation in Covid-19 tracing activities.

2 Method

This research method is descriptive quantitative with a cross sectional approach. The sample in this study were tracing officers at the Surabaya City Primary Health Care with a total of 55 respondents. The sampling technique used was cluster random sampling where sampling by groups based on the central, north, east, south and west Surabaya areas. In this study, data collection techniques used primary data. Data analysis in the form of univariate

analysis which is done by analyzing each variable from the research results. In descriptive analysis, it is explained in the form of a frequency distribution table.

3 Result And Discussion

3.1 Characteristics of Respondents

From the results of filling out questionnaires and processing data. The study showed that out of 55 respondents there were 36 female tracing officers and 19 male tracing officers. Age 17-25 years with a total of 3 (5,5%), age 26-35 29 (52.7%), age 36-45 years 21 (38.2%), age 46-55 years 2 (3,6%). The latest education was high school 1 (1%), bachelor's degree/diploma/academy 27 (49.1%), college S1 25 (45.5%), college S2 2 (3.6%).

Table 1. Frequency Distribution of Respondent Characteristics

Characteristics	Frequency (n)	Percentage (%)
Gender		
Male	19	34,5
Female	36	65,5
Age		
17-25	3	5,5
26-35	29	52,7
36-45	21	38,2
46-55	2	3,6
Latest Education		
Senior High School	1	1
Bachelor's Degree/Diploma/Academy	27	49,1
Collage S1	25	45,5
Collage S2	2	3,6

3.2 Perceived Ease of Use of Silacak Application

The perceived ease of use of a technology leads to the belief held by users that if using technology will not require more effort or is easy to use. Although people's opinions vary, in general, to minimize rejection from system users of the developed system, the system must be easy to use by users without spending a lot of effort. According to [5] perceived ease is also a belief about the decision-making process. If someone believes that the information system is easy to use then he will use it. Conversely, if someone believes that the information system is not easy to use, he will not use it. A system high in perceived usefulness, in turn, is one for which a user believes in the existence of a positive use-performance relationship [6].

Table 2. Results of the Recap of Answers to Perceived Ease of Use of Silacak Application

No.	Indicators of Perceived Ease of Use of Silacak Application	Strongly Disagree (%)	Don't agree (%)	Agree (%)	Very Agree (%)	Total (N)	Perce ntage (%)
Easy to learn							
1.	Easy to learn and apply	0	3 (5.5%)	38 (69.1%)	14 (25.5%)	55	100.0

No	Item					
2.	Learn Silacak in a short time	0	10 (18.2%)	31 (56.4%)	14 (25.5%)	55	100.0
Ease of reaching the goal							
3.	Enter data with tracking	0	5 (9.1%)	38 (69.1%)	12 (21.8%)	55	100.0
4.	Easy to view monitoring table	0	0	40 (72.7%)	15 (27.3%)	55	100.0
5.	Easy to make reports	0	7 (12.7%)	38 (69.1%)	10 (18.2%)	55	100.0
Clear and easy to understand							
6.	Steps to input data in Silacak	0	4 (7.3%)	37 (67.3%)	14 (25.5%)	55	100.0
7.	The Silacak feature is clear and easy to understand	0	4 (7.3%)	36 (65.5%)	15 (27.3%)	55	100.0
8.	Easy to understand language	0	1 (1.8%)	29 (52.7%)	25 (45.5%)	55	100.0
Flexible							
9.	Flexible when inputting NIK	0	8 (14.5%)	30 (54.5%)	17 (30.9%)	55	100.0
10.	Easy to fix Silacak	0	14 (25.5%)	33 (60%)	8 (14.5%)	55	100.0
Free from trouble							
11.	Mastering in operating it	0	10 (18.2%)	35 (63.6%)	10 (18.2%)	55	100.0
12.	Still need help using Silacak	2 (3.6%)	10 (18.2%)	33 (60%)	10 (18.2%)	55	100.0
Ease of use							
13.	Available features are easy to use	0	4 (7.3%)	36 (65.5%)	15 (27.3%)	55	100.0

Table 3. Frequency Distribution of Respondents Based on Behavioral Interests in Using the Silacak Application

No	Perceived Ease of Use of Silacak Application	Frequency (n)	Percentage (%)
1.	Well	55	100
2.	Enough	0	0
3.	Not enough	0	0
Total		55	100

Source: Primary Data, 2022

The results showed that the assessment of the perceived ease of use of the Silacak application on the tracing officers studied was 100% in good criteria. In the perception of

ease, almost all indicators that are perceived to be good by officers include ease of learning, ease of achieving goals, clear and easy to understand, flexible, free from difficulties and ease of use. However, even though officers have found it easy to use the Silacak application, there are still as many as (60%) officers who still need the help of others in its use. In addition, there are still as many (25.5%) officers who feel that the Silacak application is not easy to fix if an error occurs. This is in line with the research of [4] which states that the perceived ease that users feel is good, including the ease of learning, using, and flexibility of the Silacak application. Meanwhile, what is felt to be lacking includes that the Silacak application is less easy to control. to control. Officers must contact the data manager to return data that has been sent. Therefore, there is still a need for special attention to this aspect.

In contact tracing activities, recording and reporting data is very important to do in order to carry out early detection of Covid-19 quickly. Contact tracing is expected to stop the transmission rate and reduce the number of new people infected by the virus. If done correctly and quickly, it can stop the chain of virus transmission and stop the transmission as a whole. In addition, data and information obtained early can improve prevention and vigilance efforts carried out early. If tracking and recording and reporting are not done quickly, it will have an impact on the community due to the widespread spread of cases. Therefore, information systems such as Silacak are needed to help the tracking process easily and quickly.

This makes the Silacak application noteworthy in terms of the obstacles experienced by users in its operation. The longer the application is used, the more data is entered. The bigger the data, the more it will affect the performance of the application. In order for the application to continue to have good performance, it is necessary to do maintenance so that the application continues to have good performance so that it can minimize the occurrence of errors or errors when used. Maintenance of the Silacak application that is carried out regularly and periodically can have a positive impact on Covid-19 contact tracing activities. So that case recording and reporting activities can always be timely without being constrained by system errors. If the obstacles found are not immediately repaired, it will have an impact on the process of contact tracing activities itself and result in the obstruction of the Covid-19 case tracking process.

3.3 Perceived Usefulness of Using Silacak Application

Perceived usefulness is defined as the extent to which a person believes that using technology will improve their job performance. According to [5], it can be seen that perceived usefulness is a belief about the decision-making process. Thus if someone believes that information systems are useful then he will use them.

Table 4. Results of Recap answers to the Perceived Usefulness of Using Silacak Application

No.	Indicators of Perceived Usefulness of Using Silacak Application	Strongly Disagree (%)	Don't agree (%)	Agree (%)	Very Agree (%)	Total (N)	Percentage (%)
Work faster							
1.	Data input is faster than manual	0	5 (9.1%)	39 (70.9%)	11 (20.0%)	55	100.0

No	Item					Total	%
Task performance							
2.	Silacak can improve performance	0	5 (9.1%)	39 (70.9%)	11 (20.0%)	55	100.0
3.	Please reduce workload	1 (1.8%)	11 (20.0%)	32 (58.2%)	11 (20.0%)	55	100.0
Ease of doing tasks							
4.	Easier than manual recording	0	6 (10.9%)	36 (65.5%)	13 (23.6%)	55	100.0
Productivity increases							
5.	Please increase work productivity	0	6 (10.9%)	36 (65.5%)	13 (23.6%)	55	100.0
Effectiveness							
6.	Silacak can save time when recording	1 (1.8%)	10 (18.2%)	34 (61.8%)	10 (18.2%)	55	100.0
Benefit							
7.	Silacak is useful in recording data	0	2 (3.6%)	40 (72.7%)	13 (23.6%)	55	100.0
8.	Silacak is useful in improving tracing activities	0	3 (5.5%)	38 (69.1%)	14 (25.5%)	55	100.0

Table 5. Frequency Distribution of Respondents Based on Perceived Usefulness of Using Silacak

No	Perceived Usefulness of Using Silacak Application	Frequency (n)	Percentage (%)
1.	Well	51	92.7
2.	Enough	4	7.3
3.	Not enough	0	0
Total		55	100.0

Source: Primary Data, 2022

The results showed that the assessment of the perceived usefulness of using the Silacak application obtained from 55 tracing officers studied was 92.7% included in the good criteria. This result states that the Silacak application is mostly useful for officers in terms of assisting contact tracing activities at the Surabaya City Health Center. Based on the research results, tracing officers have felt that the use of the Silacak application is able to improve performance, increase productivity levels, increase performance effectiveness, so it can be said that overall the Silacak application is a useful system for tracers in terms of assisting Covid-19 contact

tracing activities. This is in line with research Negari and Eryando [4] which states that the Silacak application indirectly helps improve officer performance.

This study supports [7] theory that perceived usefulness is where a person's level of confidence in using a special system will improve their job performance. The results of this study also support Adamson and Shine [8] theory which defines perceived usefulness as a person's belief that the use of a technology will be able to improve their performance. In this study, it can be interpreted that the perceived usefulness of using the silacak application is the view of the contact tracing officer regarding the benefits obtained in terms of performance improvement due to using the silacak application.

According to Yuniarsih and Suwanto [9] work productivity is the concrete results produced by individuals or groups, during a certain unit of time in a work process. The presence of information systems should ideally be able to increase work productivity. The Silacak application, which is considered useful, can help in terms of summarizing time that becomes more efficient and effective in completing work. Stable and fast data recording and reporting activities, better performance and productivity of contact tracing officers. At the very least, the work results are in accordance with the standard. So that when there is a spike in Covid-19 cases which will require contact tracing officers to be quick and responsive in tracking, officers are used to and can handle it well. This is in line with the research of Wu *et al.* [10] when use of the reporting system is supported by healthcare professionals' existing values, prior experiences and practice needs, they will not only feel more confident in using the system, but also exhibit a higher degree of perception of the advantages of the system. Therefore, they will be more likely to use it.

3.4 Attitude of Silacak Application Users

Attitude towards technology use behavior is defined by Davis [7] as a person's positive or negative feelings if he has to perform the behavior to be determined. Attitude towards behavior is also defined by Mathieson [11] as the user's evaluation of his interest in using the system.

Table 6. Results of Recap answers to the Attitudes of Silacak Application Users

No.	Indicator of Attitude of Silacak Application Users	Strongly Disagree (%)	Don't agree (%)	Agree (%)	Very Agree (%)	Total (N)	Percentage (%)
1.	Still willing to use Silacak	0	5 (9.1%)	39 (70.9%)	11 (20.0%)	55	100.0
2.	Silacak provides convenience in recording data	0	5 (9.1%)	39 (70.9%)	11 (20.0%)	55	100.0
3.	Silly features are boring	1 (1.8%)	11 (20.0%)	32 (58.2%)	11 (20.0%)	55	100.0

Table 7. Frequency Distribution of Respondents Based on Attitudes of Silacak Application Users

No	Attitude of Silacak Application Users	Frequency (n)	Percentage (%)
1.	Well	52	94.5
2.	Enough	3	5.5
3.	Not enough	0	0
Total		55	100.0

Source: Primary Data, 2022

The results showed that the assessment of the Silacak application user attitude variable obtained from 55 tracing officers was 94.5% included in the good criteria. The majority of respondents have an attitude to remain willing to use the Silacak application in terms of recording and reporting data on confirmed cases and close contacts of Covid-19. It can be said that officers already have a good attitude with the Silacak application that helps contact tracing activities at the Primary Health Care in Surabaya City. Based on the results of this study, it can be seen that health center tracing officers show an attitude that they will remain willing and more skilled in using the Silacak application to assist Covid-19 contact tracing activities. But uniquely, although the attitude assessment is in the good category there are still health center tracing officers who view the features on the Silacak application as boring. To maintain user attitudes in their willingness to use the application, it is necessary to regularly evaluate the appearance of the features in the application. In addition, system development can also be carried out on applications related to displays that are still considered boring or considered difficult by users. With the increasing willingness and comfort in using the application, it has a positive impact on increasing Covid-19 contact tracing activities.

3.5 Behavioral Intention to Use Silacak Application

Jogiyanto [5] states that behavioral intention to use technology is a person's desire (interest) to take a certain action. A person performs an action (behavior) when he has the desire or interest to do so. The higher the intensity of its use, the more it will increase its use, and increase the value of the benefits [12]. The results showed that the assessment of behavioral interest in using the Silacak application obtained from 55 tracing officers was 100% included in the good criteria. Almost all tracing officers thought that they were interested in trying to use the Silacak application on an ongoing basis and were interested in trying to learn the features in Silacak.

Table 8. Results of the Recap of the Behavioral Intention to Use Silacak Application

No.	Behavioral Intention to Use Silacak Application	Don't agree (%)	Agree (%)	Very Agree (%)	Total (N)	Percentage (%)
1.	Will try to use Silacak	6 (10.9%)	36 (65.5%)	13 (23.6%)	55	100.0
2.	Will try to learn the features in Silacak	4 (7.3%)	38 (69.1%)	13 (23.6%)	55	100.0
3.	Will use Silacak continuously	5 (9.1%)	38 (69.1%)	12 (21.8%)	55	100.0

Table 9. Frequency Distribution of Respondents Based on Behavioral Intention to Use Silacak Application

No	Behavioral Intention to Use Silacak Application	Frequency (n)	Percentage (%)
1.	Well	55	100
2.	Enough	0	0
3.	Not enough	0	0
Total		55	100

Source: Primary Data, 2022

Based on the results of this study, puskesmas tracing officers have an interest in learning the features of Silacak. Because the system is easy to use and can help the data entry process, tracing officers have an interest in using Silacak on an ongoing basis. Although the majority of tracing officers are interested in using the Silacak application, there are still some officers who are not interested in using silacak on an ongoing basis. In fact, in the future, Silacak is needed to help facilitate the recording and reporting of case data. This research is in line with [13] who state that from the perception of intention / interest in using technology (behavioral intention to use) most users assume good and are interested in the technology and system, so that it can encourage the attitude and intention of officers to continue using information systems in completing their tasks and work. Previous research results show that behavioral interest is a good predictor of technology use by system users [14].

4 Conclusion

The conclusion of this study is that the acceptance of the Silacak application in Covid-19 contact tracing activities based on the technology acceptance model (TAM) theory in Surabaya City is considered good. Which means that tracing officers have accepted the Silacak application well to assist in contact tracing activities. To maintain good acceptance of the Silacak application, it is hoped that the development of the Silacak application will continue to be carried out so as to minimize the occurrence of system errors.

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