


Application SIMPUS (*Sistem Informasi Manajemen Puskesmas*) with TAM Theory (Technology Acceptance Model) at *Puskesmas Setabelan* in Surakarta

Frieda Ani Noor¹, Aris Prastyoningsih², Ajeng Maharani Pratiwi³, Retnaning Tyas Rahayu⁴ and Ema Novita Deniati⁵

^{1,2,3,4} Kusuma Husada University, Surakarta, Central Java, Indonesia

⁵ Department of Public Health, Faculty of Sport Sciences State University of Malang, East Java, Indonesia

| Article Info | ABSTRACT |
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| <p>Article history: Received June 14, 2024 Revised July 11, 2024 Accepted August 12, 2024</p> <hr/> <p>Corresponding Author: Frieda Ani Noor, Kusuma Husada University, Surakarta, Central Java, Indonesia Email: frieda.noor@ukh.ac.id</p> | <p>Based on the results of the preliminary study, Puskesmas Setabelan in implementing the SIMPUS application has not been maximized because at the end of each month the internet network is often erroneous because it does not have a good provider, there are still new employees who have not received socialization related to the use of the SIMPUS application, and the patient's online registration has not been opened due to the condition of the community who are still unfamiliar with technology. So the researcher is interested in analyzing how effective the acceptance of the use of the SIMPUS (Puskesmas Management Information System) application is using the TAM (Technology Acceptance Model) theory at the Setabelan Health Center in Surakarta City. This type of research is qualitative and descriptive with data collection methods in-depth interviews with 11 informants including SIMPUS coordinators, SIMPUS programmers, nurses, midwives, pharmacists, dental nurses and administrative staff. The sample selection method used purposive sampling method.</p> <p>Keywords: <i>effectiveness, SIMPUS, usefulness, perceived, attitude, behavioral</i></p> <p>This article is licensed under a Creative Commons Attribution 4.0 International License.</p>  |

1. INTRODUCTION

In the era of globalization, technology is a major requirement in competition, especially in the health sector. According to WHO (*World Health Organization*), Health Information System (HIS) is one of the six "*building blocks*" or main components in the health system in a country. In the National Health System, HIS is part of the 6th sub-system, namely the health information management and regulation sub-system. The sub-system is a sub-system that manages the functions of health policy, health administration, health information and health law that is adequate and able to support national health efforts to be successful, effective, and support the implementation of other sub-systems in the SKN (National Health System) as an integrated unit. (1).

The high demand for the quality of health services at this time is important to note, especially in improving the level of health of the Indonesian people who are more optimal in achieving the highest degree of health. (2). According to Law Number 36 of 2009, concerning Health in article 168, it explains that to organize effective and efficient health services, health information requires an information system. The government provides public access to health information in an effort to improve public health status. (3).

One of the ways to improve health services to the community is information technology. Information technology is increasingly sophisticated, health services are also developing, especially in terms of health information systems. The benefits of SIK are to facilitate and accelerate health services, standardize procedures and service standards and obtain accurate data and information to

support decision making. (4).

Setabelan Health Center Surakarta City is one of the health centers that has a health information system in the form of an application, namely the SIMPUS application or called the Electronic Health Center Health Information Report. This application was created in 2017, where the SIMPUS (Puskesmas Management Information System) application is a Puskesmas application whose main function is to manage all patient data starting from registration, examination (diagnosis) and treatment of the patient. The data that has been inputted is accommodated in a database which will later be categorized according to parameters for report needs such as daily visit reports, payment methods, types of diseases and other reports as needed in Puskesmas management. (5).

Data on the number of patient visits at the Setabelan Health Center in Surakarta City after using the SIMPUS application in 2017 was 19,458 people, in 2018 it was 27,094 people, and in 2019 it was 32,501 people. However, it has decreased in 2020 by 24,829 people and in 2021 by 23,559 people.

Based on the results of the preliminary study, health workers at the Setabelan Health Center in Surakarta City who use SIMPUS (Puskesmas Management Information System) still work manually to manage health data and report the results of activities every month which takes quite a long time. Based on interviews with sources at the Setabelan Health Center in Surakarta City, the use of SIMPUS is considered less effective because reporting to the Madiun District Health Office is still manual because the database is stored on each computer so that it is recapitulated monthly, but there is already automatic input of patient data.

When compared to the SIMPUS application, namely for reporting to the Health Office, there are already columns available in the application. Health reporting is situational and dynamic so that each period changes depending on requests from the province or government, such as now there are new cases of Covid-19, KLB (Extraordinary Events) or other outbreaks that are not 100% paperless or *online*. There is already patient data input for BPJS, General, and New Patients, but *online* registration is not opened for patients so that if they want to seek treatment, they must queue first to register at the registration counter. *Online* patient registration has not been opened due to the condition of people who are still unfamiliar with technology. The application of the use of the SIMPUS application is expected to be more flexible and effective and efficient in order to increase the effectiveness of the work of employees at the Setabelan Health Center, Surakarta City in carrying out administrative and easy to get reporting results without manuals to be submitted to the Madiun District Health Office.

Based on the results of the preliminary study, the Setabelan Health Center in implementing the SIMPUS application management has not been maximized and there are still obstacles, namely the application of the SIMPUS application at the Puskesmas when the application will be used or needed, there are often errors from the server or network at the Puskesmas itself. At the end of each month, the server or network often crashes and does not have a good provider, so the report must be made manually. At the beginning of the SIMPUS application, employees who were 50 years old and above or *midlife* still did not understand the features in the SIMPUS application. Now they are getting used to using the application, but if there is an update to a feature or menu, they need to be educated further because they do not understand the feature. There are new features or menus in the application and have not been used by puskesmas employees because there has been no further socialization from the Puskesmas.

Based on the background of the problem, the researcher is interested in conducting research on the effectiveness of acceptance of the use of the SIMPUS (Puskesmas Management Information System) application at the Setabelan Health Center in Surakarta City.

2. METHOD

Study Design and Setting

The type of research used is descriptive research and uses qualitative methods. Using descriptive qualitative methods because there are several considerations, the first is because it

can more fully describe the situation in the field, the second is that in this study in-depth interviews will be conducted with employees / health workers who join in the use of the SIMPUS application and work at the Setabelan Health Center, Surakarta City. Third, this research aims to understand a phenomenon experienced by the research subject, for example, behavior, perception, motivation, action, and others, in the form of descriptions in the form of words and language in a special natural context and by utilizing various scientific methods. (12). So qualitative descriptive research is a case study approach that describes the situation that occurs in a subject or object in the field, then written in words or sentences to get a conclusion.

Study Participants

The research subjects/informants who will be taken in this study are employees/health workers who join in the use of the SIMPUS application and work at the Setabelan Health Center, Surakarta City, totaling 11 informants including the head of the SIMPUS coordinator, SIMPUS programmer, nurse, midwife, pharmacist, dental nurse and administrative staff. The sampling technique in this study used *non-probability sampling techniques* (non-random sampling), namely the *Purposive Sampling* technique. *Purposive sampling* technique is a sample taken not randomly or randomly but based on consideration with the purpose or purpose of the study. This type of sample is also known as *judgment sampling*. A person or informant is taken as a sample because the researcher considers that the person or informant has information and understanding of the SIMPUS application and runs the SIMPUS application daily according to the applicable SOP in serving patients needed for his research.

Study Participants

To obtain valid data in this research, appropriate data collection techniques are needed. Data acquisition techniques in this study used in- depth interview techniques.

3. RESULTS AND DISCUSSION

Data from informants in this study were obtained by conducting in-depth interviews (*Indept Interview*) with 4 informants who use the SIMPUS application and work at the Setabelan Health Center Surakarta City including pharmacists, medical recorders, dental nurses, and midwives. The characteristics of the informants can be seen in the table below:

Table 1. Informant Characteristics in the Working Area of Setabelan Health Center Surakarta City

| No. | Informant | Age | Education | Position | Methods |
|-----|-----------|-------|--|--------------------------|---|
| 1. | Y | 49 th | D-III Nursing | Dental Nurse | In-depth Interview and <i>checklist</i> |
| 2. | RR | 27 th | D-III Medical Records and Health Information | Skilled Medical Recorder | In-depth Interview and <i>checklist</i> |
| 3. | N | 33 th | Pharmacist Profession | Pharmacist | In-depth Interview and <i>checklist</i> |
| 4. | F | 45 th | D-III Midwifery | Midwife | In-depth Interview and <i>checklist</i> |

Perceived Usefulness

Effectiveness of Acceptance of the use of the SIMPUS application for employees or health workers at the Setabelan Health Center, Surakarta City

Perceived usefulness of use is a level where a person believes that using a particular system will improve one's performance and the effectiveness of an organization. One of the goals of creating a health information technology system is to shorten the time it takes for users to complete a job. The utilization of the SIMPUS application is expected to be able to cut the

time to do a job or search for information contained in the application, but a health information system has advantages and disadvantages when using it.

Based on the results of interviews with informants, the performance of this puskesmas can be said to be good because this puskesmas can implement the SIMPUS application where this application is expected to facilitate puskesmas employees in reporting to the Surakarta City Health Office.

An important point of an information system is that the confidentiality of documents can be guaranteed or not. If guaranteed, it can improve the quality of a health center organization itself.

From the results of interviews with several informants, in terms of guaranteed document confidentiality and patient privacy rights are quite well maintained using this SIMPUS application. Individual patient data including the patient's medical history is safe and not exposed to the public because this E-Link application can only be opened by health center staff using a user and password that is only known by health center staff, besides that SIMPUS can only be opened by health center staff.

Ease of Use (Perceived Ease Of Used)

Information technology is used not absolutely because of social pressure, so it can be concluded that the use of information technology is not due to an element of pressure, but because it is easy to use. The ease of use of the system measures each user who uses the application mentally will affect daily performance, where each user who uses the SIMPUS application whether there are obstacles or difficulties experienced when using or operating the application.

From the informants' statements, it can be concluded that the SIMPUS application has great benefits in the process of patient identification, history taking, action, and at Setabelan Health Center. However, there needs to be an effort to improve data integration between SIMPUS and P-Care BPJS and maintain the availability of a reliable internet network to maximize the potential use of this application in providing quality health services.

Overall, findings from interviews with medical personnel at Setabelan Health Center indicate that the main obstacle in using the SIMPUS application is the unstable network. This causes SIMPUS to often not be accessed smoothly and affects the efficiency of health services. In dealing with this constraint, efforts should be made to improve the network infrastructure and ensure that users are equipped with a basic understanding of SIMPUS usage in order to overcome barriers to its use.

An information system that can run well needs guidance from the Puskesmas to all employees / health workers and employees who *manulife*. The Puskesmas needs to hold training on the application on a scale, for example every 3 or 6 months so that user skills increase and are motivated to continue using it in daily activities. Overall, it can be concluded that guidance from the Puskesmas is very important in ensuring that information systems such as SIMPUS can run well. This guidance can be in the form of initial training when using the application, as well as self-taught learning and direct guidance when the application is used in daily activities. Through this guidance, users' skills in using SIMPUS can be improved, and employees are encouraged to continue optimizing the use of the application in improving the efficiency of health services.

Attitude Toward Using the System

Attitude towards system use in the form of acceptance or rejection as an impact when someone uses technology in their work. Measuring whether the appearance of the application can be seen clearly, interesting, understood, not boring, and can be accepted by employees / health workers of the Setabelan Health Center so that conceptually the application can run normally without disturbing the condition of the application user.

Overall, the interview results show that the appearance of the SIMPUS application at

Setabelan Health Center is a factor that needs to be considered to increase acceptance and effectiveness of use. Improving the display to be more attractive, understandable, and suitable for the device used can help create a more positive work environment and help the application run normally without disturbing the users of the application.

Behavioral Intention To Use

The level of use of a computer technology in a person can be predicted from the user's attentive attitude towards the technology, for example, the desire for motivation to keep using, and the desire to motivate other users.

Overall, the interview results show that there is a strong motivation from the informants to motivate other users to continue using the SIMPUS application. Some of the factors that influence this motivation include the addition of features, training related to the application, the development of digitalization in health services, and a shared sense of responsibility to fill in data properly and correctly. This motivation is expected to help improve the effectiveness of the acceptance and use of the SIMPUS application at Setabelan Health Center.

A health information system should need regular evaluation and development for the better in the future.

Overall, it is important to evaluate and develop the SIMPUS application regularly. The addition of drug monitoring data features, drug filters, and expired drug reminders are important points to improve the efficiency and quality of health services at Setabelan Health Center. By considering input from application users, it is hoped that the SIMPUS application can continue to grow and provide greater benefits in supporting better and more efficient health service management.

Developing a health center management, it is necessary to control a health information system, especially in the pharmacy section or control when drug stocks are ED or *expired*. The use of the information system aims to help facilitate the completion of human tasks in processing data and is expected to reduce *human error*.

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4. CONCLUSIONS

The use of the SIMPUS application is useful to facilitate and accelerate health services and provide accurate data and information for decision-making. However, there are several obstacles in implementing this application, such as limited network infrastructure that causes frequent failures and lack of staff understanding of the new features of this application.

Facing these obstacles, it is necessary to improve supervision and training of medical personnel in the use of the SIMPUS application. Regular training support from the health center will improve user skills and ensure smooth operation of the application.

The perceived usefulness and ease of use of the application play an important role in system acceptance and use. The use of the SIMPUS application is considered effective in reports submitted to the Surakarta City Health Office, but interface and usability improvements are still needed to make the application more attractive and easily understood by all users.

In addition, the motivation to use the SIMPUS application can also influence other users. This motivation comes from a desire to improve the efficiency of health services and from a shared sense of responsibility to fill in accurate and correct data.

To improve the efficiency of using the SIMPUS application, it is necessary to regularly evaluate and develop the application. Additional features, such as drug tracking data and withdrawal of expired drugs, can help improve the efficiency and quality of health services. Through this study, the SIMPUS application has great potential to improve the performance

and efficiency of Setabelan Health Center in Surakarta City. With a better understanding of the use of the application and the support of the Puskesmas, it is expected that the application can play an important role in improving the health system in the region.

Based on the results of research that has been conducted on "SIMPUS (Puskesmas Management Information System) Application with TAM (*Technology Acceptance Model*) Theory at Setabelan Health Center Surakarta City", the researcher provides suggestions as input in the hope that the SIMPUS Application (Puskesmas Management Information System) will maintain its effectiveness and also get better in the future.

a. For Setabelan Health Center

- 1) Improved Training and Education: Setabelan Health Center needs to provide regular training and education to all employees/health workers regarding the use of the SIMPUS application. This will help improve users' understanding and skills in using the application more effectively.
- 2) Network Infrastructure Evaluation and Improvement: Setabelan Health Center should periodically evaluate the quality and reliability of the network infrastructure. In dealing with network-related constraints, it is necessary to improve and upgrade the infrastructure so that the SIMPUS application can run smoothly.

b. For future researchers

- 1) Future researchers can examine the factors that influence the sustainability of SIMPUS application use in the Puskesmas environment. This study will help in designing strategies to maintain the use of the application over a longer period of time.

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Conflict of Interest Disclosure

The authors declare no conflict of interest

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