

# **DESCRIPTIVE ANALYSIS OF PUSKESMAS MANAGEMENT INFORMATION SYSTEM (SIMPUS) IN THE OUTPATIENT DEPARTMENT OF PUSKESMAS KALIWIRO WITH HOT- FIT METHOD**

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## **ABSTRACT**

Community health center management information systems are really needed by community health facilities to maintain service quality, protect patient safety and support fast and correct decision making. The implementation of the community health center management information system at the Kaliwiro Community Health Center has not been going well so far, so the information system used is still dual, namely manual and electronic systems. The health center information system that has been implemented requires evaluation, improvement and improvement to adapt it to current developments. The HOT Fit model is a complete model and best suits the problem conditions in this research. The main focus of research is directed at the relationship between human aspects, organizational aspects, technological aspects, and the benefits produced by the system. The general aim of this research is to test the HOT Fit model in the community health center management information system at the Kaliwiro Community Health Center. This type of research is analytical research with a quantitative approach. The total number of research respondents was 24 people. The data collection method used in this research was interviews with instruments in the form of questionnaires. Hypothesis testing is carried out by conducting regression tests using Descriptive Analysis. The results of this research show that all the hypothesis paths in the HOT Fit model framework that were tested have an influence on each other, except for organizational variables which have no influence on the benefit variable. The total number of research respondents was 24 people. The data collection method used in this research was interviews with instruments in the form of questionnaires. Hypothesis testing is carried out by conducting regression tests using Descriptive Analysis. The results of this research show that all the hypothesis paths in the HOT Fit model framework that were tested have an influence on each other, except for organizational variables which have no influence on the benefit variable. The total number of research respondents was 24 people. The data collection method used in this research was interviews with instruments in the form of questionnaires. Hypothesis testing is carried out by conducting regression tests using Descriptive Analysis. The results of this research show that all the

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**Keywords:**HOT Fit Model, Information System, Community Health Center

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## **1. Introduction**

Primary health care is the health service at the forefront, the first time people need it when they experience health problems or accidents. Meanwhile, secondary and tertiary health services are hospitals, where people need further treatment or referrals (Sanjaya, 2016). Puskesmas prioritizes promotive and preventive efforts to achieve optimal levels of public health. These health efforts are carried out with an emphasis on services for the wider community in order to achieve optimal levels of health, without ignoring the quality of service to individuals. The Puskesmas is led by a head of the Puskesmas who is responsible to the District/City Health Service (Ministry of Health of the Republic of Indonesia, 2022). Puskesmas is a complex organization that requires the support of a complete and accurate information system to optimize services. Information is an important asset so it needs to be managed optimally to support decision making.

The Community Health Center Management Information System (SIMPUS) is a system that is capable of integrating and communicating information flows both within and outside the Community Health Center. This information system includes: electronic medical record system, laboratory information system, radiology (medical imaging) information system, pharmaceutical information system, and nursing information system (Rahayu, 2018). Health services are required to prioritize patient safety (care about the risk of medical errors), cost control, consumer-focused services, the development of evidence-based medicine and demands for privacy protection (Sridhar, 2017) Outpatient services are one of the services provided by hospitals under the medical record installation. The Outpatient Registration Center (TPPRJ) can usually serve hundreds of patients in one day who will seek treatment at the clinic provided by the community health center. Outpatient installations are simply defined as including therapeutic and diagnostic procedures as well as treatment given to patients in an environment that does not require hospitalization (Decree of the Minister of Health of the Republic of Indonesia, 2011). Kaliwiro Community Health Center is the only community health center in Kaliwiro District, Wonosobo Regency, Central Java Province with a working area of 20 villages and 1 subdistrict which provides various basic services in the form of Emergency Room (IGD), General Polyclinic, Dental Polyclinic, Pharmacy Installation, Polyclinic Maternal Child Health, The process of using information systems is a crucial part in determining the success or failure of management at a community health center, so to find out the effectiveness of using Simpus, an evaluation is needed. Therefore, researchers are interested in researching the evaluation of the special Puskesmas Management Information System in the outpatient section of the Kaliwiro Puskesmas using the methodHOT-Fit does the analyzing The core components in an information system, namely Human (Man) -Organization (Organization) Technology (Technology) and the suitability of the relationship between these three components in running a Kaliwiro Community Health Center management information system.

## **2. Literature Review**

### *2.1 Community Health Center Management Information System (SIMPUS) in the Outpatient Department*

SIMPUS is a structure that provides information to assist the decisionmaking process in implementing health center management in achieving its activity targets (Minister of Health Regulation No. 128 of 2004). Puskesmas is a primary health care facility that has not yet implemented Simpus. The outpatient registration process is carried out manually and registered patients are recorded in the register book before a node is created, but this method is often confusing because the recording is complicated and sometimes inaccurate (Tiara, 2019).

### *2.2 HOT Fit Evaluation Method Research*

Research the evaluation of the implementation of information systems in the field of health services, especially community health centers, can use the HOT Fit method (Hariningsih, 2014). The HOT Fit evaluation method connects the components contained in the information system, namely the Human, Organizational and Technology components. The human component can assess the information system in terms of system use based on the frequency of use and the breadth of the information system's functional scope. The human component also assesses the system from the aspect of user satisfaction (Ali et al., 2015). User satisfaction is an evaluation of the user's experience in using an information system and the potential impact of the information system (Murnita et al., 2016). The technology component consists of system quality, information quality and service quality. System quality in information systems concerns the interrelationship of features in the system including system performance and user interface (Yusof et al., 2008). Kaliwiro Community Health Center officers who can access this system are 24 people with 5 respondents working in the registration unit, 3 people in the medical records work unit, 3 respondents in the emergency room nurse unit, 2 respondents in the general poly nurse work unit, 2 respondents in dental nurse work unit, 2 respondents in the pharmacist work unit, 3 respondents in the midwife work unit, 1 respondent in the lab officer work unit, 2 respondents in the general practitioner work unit, and 1 respondent in the dentist work unit (Puskesmas Kaliwiro, 2023 ).

## **3. Research Methodology**

This research uses a descriptive analytical approach using data The results of the questionnaire from the research components are system quality, information quality, service quality, system use, user satisfaction, organizational structure and organizational environment. The questionnaire results data was processed using the Excel application. The population of this research is all structural officers and staff who are directly related to SIMPUS. The measurement scale used in this questionnaire is a Likert scale using a score range of 1-5.

## **4. Results**

### *4.1 Demographic Analysis*

Researchers analyzed the results of respondents' answers to questions contained in the questionnaire containing questions regarding the identity of respondents who were related to SIMPUS. The number of respondents in this study was 24 people who were asked questions covering work unit, gender, age, education level and length of service. The following are the results of the demographic analysis of respondents:

#### **4.1.1 Working Units**

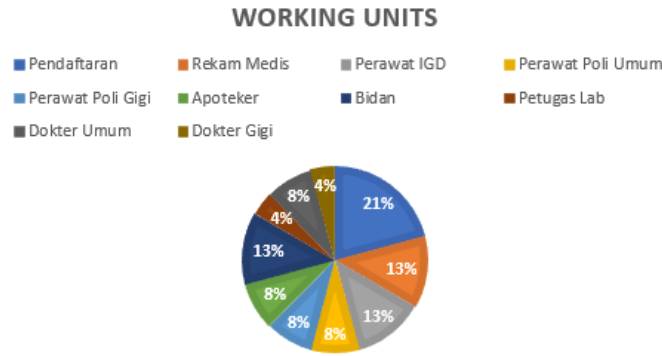


Figure 1. Data Distribution Diagram Based on Working Units

Source: Personal Data processed in 2023

The results of the demographic analysis of respondents based on work units are that there are a total of 24 respondents with 5 (21%) respondents working in the registration unit, 3 respondents in the medical records work unit (13%), 3 (13%) respondents in the nursing unit ER, 2 respondents (8%) in the general poly nurse work unit, 2 respondents (8%) in the dental nurse work unit, 2 people (8%) respondents in the pharmacist work unit, 3 people (13%) respondents in the midwife work, 1 person (4%) was a respondent from the lab officer work unit, 2 people (8%) were respondents from the general practitioner work unit, and 1 person (4%) was a respondent from the dentist work unit.

#### 4.1.2 Gender

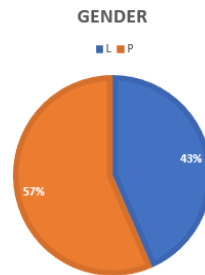


Figure 2. Data Distribution Diagram Based on Gender

Source: Personal Data processed in 2023

The results of calculating the number of respondents according to female gender were 13 people (57%) while the number of male respondents was 10 people (43%).

#### 4.1.3 Age

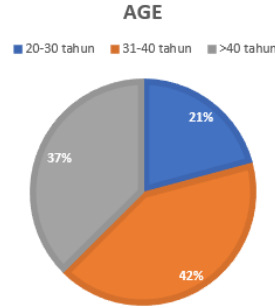


Figure 3. Data Distribution Diagram Based on Age

Source: Personal Data processed in 2023

According to the calculation results, the results showed that respondents aged 20 - 30 years were 5 people (21%), respondents aged 31-40 years were 10 people (42%), and respondents aged >40 years were 9 people (37%).

#### 4.1.4 Education Level

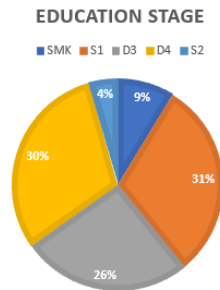


Figure 4. Data Distribution Diagram Based on Education Stage

Source: Personal Data processed in 2023

This calculation shows that according to the educational level of the majority of respondents, 7 people (31%) have a Bachelor's degree, 7 people have a D4 (30%), 6 people have a D3 (26%), 2 people have a vocational school (9%), and 1 person has a master's degree. (4%)

#### 4.1.5 Period of Employment

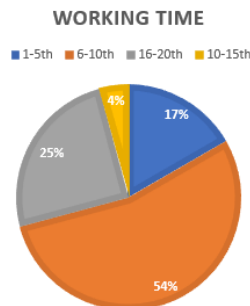


Figure 5. Data Distribution Diagram Based on Working Time

Source: Personal Data processed in 2023

Respondents in this study according to their length of service consisted of 1-5 years totaling 4 respondents (17%), 6-10 years totaling 13 people (54%), 10-15 years totaling 1 respondent (4%), and ages 16- 20 years old totaling 6 people (25%)

#### 4.2 Analysis of Reasearch Instruments

##### 4.2.1 Technology Component Analysis

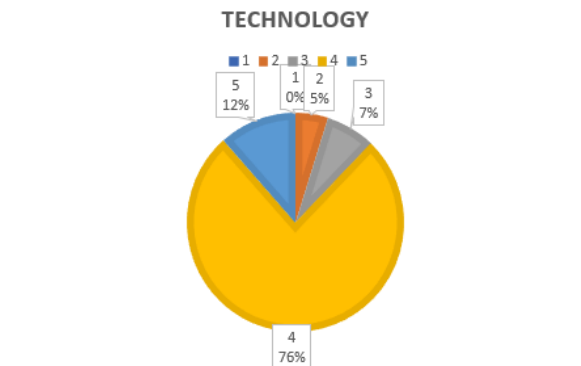


Figure 6. Data Analysis Diagram Based on Technology

Source: Personal Data processed in 2023

The technology component based on HOT-Fit analysis is one of the main components consisting of system quality, information quality and service quality. Based on tests from the questionnaire assessment, it was found that there were no respondents who answered strongly disagree, 1 respondent (5%) answered disagree, 2 respondents (7%) answered disagree, 18 respondents (76%) answered agree, and 3 Respondents (12%) answered strongly agree.

##### 4.2.2 Human Component Analysis

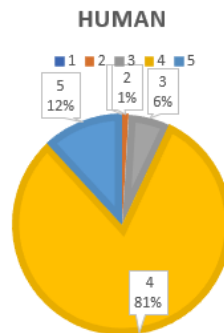


Figure 7. Human Based Data Analysis Diagram

Source: Personal Data processed in 2023

The human component based on HOT-Fit analysis is one of the main components consisting of system development, system use and user satisfaction. Based on tests from the questionnaire assessment, it was found that there were no respondents who answered strongly disagree, 1 respondent (1%) answered disagree, 2 respondents (6%) answered disagree, 18 respondents (81%) answered agree, and 3 respondents (12%) answered strongly agree.

#### 4.2.3 Organizational Component Analysis

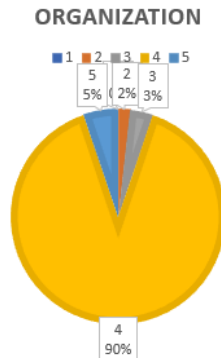


Figure 8. Data Analysis Diagram Based on Technology

Source: Personal Data processed in 2023

The organizational component based on HOT-Fit analysis is one of the main components consisting of organizational structure, organizational environment and benefits. Based on tests from the questionnaire assessment, it was found that there were no respondents who answered strongly disagree, 1 respondent (2%) answered disagree, 1 respondent (3%) answered disagree, 21 respondents (90%) answered agree, and 2 Respondents (5%) answered strongly agree.

## 5. Discussion

Application System Information Management Public health center in Public health center Kaliwiro started in 2017. According to Arikunto (2010), "Analysis is a process of determining the results that have been achieved from several planned activities to support the achievement of goals", which means that in the implementation of SIMPUS so far at the Kaliwiro Community Health Center it is sufficient to carry out analysis during implementation and the process of determining the results that have been achieved from several planned activities to support the achievement of Puskesmas goals. The factors that form the basis for evaluating the implementation of the Community Health Center Management Information System (SIMPUS) at the Kaliwiro Community Health Center are as follows:

### 5.1. Human

#### 5.1.1 System Users

Overall, system users or community health center officers are greatly helped by SIMPUS, it helps with their work because it is routinely used, apart from that, good behavior will influence the smooth running of the system and performance among fellow users.



### 5.1.2 User Satisfaction

Overall, the community health center staff are quite satisfied with the current implementation and functions in SIMPUS, but the implementation carried out in the pharmacy and laboratory is still lacking because they still use paper as a tool to input data into SIMPUS, but overall the employees feel that The benefits of SIMPUS include reducing workload and reducing errors in work

### 5.1.3 System Development

The system development carried out is not carried out internally at the puskesmas, the puskesmas officers only provide criticism and suggestions which have been collected to the person in charge who will then present them in forums or meetings held every week regarding improving the quality of the Kaliwiro puskesmas management information system Based on the results of interviews conducted by system users, including all community health center officers implementing the Community Health Center Management Information System (SIMPUS), almost all departments use it, including polyclinics represented by nurses and doctors, pharmacy, laboratory, medical records and registration and reporting which are used by Head of Community Health Center and Information Technology representative. SIMPUS is used routinely every day and can help the work of community health center officers.

The implementation of the Community Health Center Management Information System (SIMPUS) at the Kaliwiro Community Health Center previously held training both internally at the community health center and representatives sending officers at the Wonosobo District Health Service forum and then forwarded to the internal community health center. days, and users accept the system well, because it has appropriate functions and reduces the workload of officers. Based on Yusuf (2013), the role of humans in the HOT Fit method theory states that the human component assesses the information system in terms of system use on frequency and breadth of functions and investigations of information systems. System use is also related to who uses it (who uses it), the level of user (level of user), training, knowledge, motivation to use, attitudes towards accepting or rejecting the system, as well as user satisfaction which can be related to the perspective of benefits and attitudes of users towards the information system. which is influenced by personal characteristics. SIMPUS at the Kaliwiro Community Health Center is appropriate and meets the characteristics of the factors used in the HOT Fit method.

## 5.2 Organization

### 5.2.1 Organizational Structure

Having support from top management is very important and has been done by the head of the community health center, supported by human resources who work together to make the Kaliwiro Community Health Center better.

### 5.2.2 Organizational Environment

The results of the interview show that SIMPUS makes the organization at the Kaliwiro Community Health Center improve and the condition of the organization's internal environment influences SIMPUS acceptance.

### 5.2.3 Benefits

The application of SIMPUS includes helping to carry out daily work, can increase work productivity, reduce workload, help reduce error rates in carrying out



work, reduce costs to be efficient and also includes helping to make decisions and achieve effective goals.

The implementation of SIMPUS at the Kaliwiro Community Health Center in the organizational characteristics of the evaluation of the implementation of the Community Health Center Management Information System in Kaliwiro includes, among other things, teamwork showing satisfactory results in the use of the information management system or SIMPUS, support from top management and officers from each other is sufficient to provide good results. The organizational environment does not yet appear to be connected to this implementation, so according to Yusof (2013), in the HOT Fit method, organizational components assess that the system implemented from the organizational structure aspect is appropriate, but the connection to the Organizational Environment is not yet visible.

### *5.3 Technology*

#### *5.3.1 System Quality*

During implementation, SIMPUS has data accuracy that meets the needs of each part, SIMPUS integrates well between parts starting from registration to poly-poly, the system is easy to access depending on network speed and ownership of usernames and passwords which not all officers have, time to access It doesn't take a long time, during SIMPUS implementation, the system rarely experiences problems, only often with the internet connection from the internal Puskesmas.

#### *5.3.2 Information Quality*

SIMPUS at the Kaliwiro health center displays data that corresponds to reality every day. The information input and output will always be up to date because internal and external activities will be input immediately

#### *5.3.3 Service Quality*

Kaliwiro Community Health Center has speed of response and technical support for users who are directly connected to SIMPUS such as P-careBPJS health service provider.

The quality of the information in the system is quite good, this can be seen from the answers of informants from the registration department who were quite satisfied with using SIMPUS which is as useful as an electronic-based medical record. The good quality of information must be maintained, but improvements also need to be made, especially in terms of timeliness of data entry and accuracy so that the information produced remains in accordance with the original. The quality of service in the library information system is also quite good because both the speed and smoothness of the internet connection rarely have problems, only about once a month there is a problem with connection slowness

## **6. Conclusion**

### *6.1 Human participation in using SIMPUS using the HOT Fit method supports the analysis of the implementation of SIMPUS in Kaliwiro*

seen from the use of the system which includes behavior whether or not to accept the system and good behavior can influence the smooth running of the system, in its implementation SIMPUS has run well and can feel the desired benefits according to the

motivation of its users. Existing training from both external and internal Puskesmas makes the work of Puskesmas officers easier and also reduces workload.

*6.2 Organizational participation in the use of SIMPUS using the HOT Fit method which supports the evaluation of the implementation of SIMPUS at the Kaliwiro Community Health Center.*

There is organizational structure support, especially from top management during its implementation as well as an organizational environment that collaborates with each other in implementing the Community Health Center Management Information System (SIMPUS)

*6.3 The role of technology in using SIMPUS uses the HOT Fit method which supports the evaluation of the implementation of SIMPUS at the Kaliwiro Community Health Center.*

In terms of the role of technology during its implementation it is quite good, but if there is a problem either from the center or internally at the puskesmas it is very disruptive to the service

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