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Evaluation of the Health Center Management Information System (SIMPUS) Implementation trough PIECES and HOT-Fit Methods at the Puskesmas (Community Health Center) Limboto

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ABSTRACT

The Health Center Management Information System (SIMPUS) is a service for managing patient data starting from the registration stage, examination to patient treatment. The application of SIMPUS needs to be evaluated in order to improve the quality of health services which can be done using the PIECES and HOT-Fit approaches/methods. The PIECES method consists of six assessment indicators including performance, information, economy, control, efficiency and service. The HOT-Fit method consists of four assessment indicators including human, organization, technology and benefits. The aim of the research is to evaluate the implementation of SIMPUS using the PIECES method and the HOT-Fit method at the Limboto Community Health Center. This type of research is descriptive with quantitative methods. The population is all health workers who use the SIMPUS application at the Limboto Community Health Center, totaling 62 health workers. The number of samples is the same as the population, namely 62 people, which was obtained using exhaustive sampling techniques. The data was analyzed descriptively and then presented in the form of a frequency distribution table. The results of the research show that the evaluation of the application of SIMPUS using the PIECES method was obtained by the majority of respondents (53.2%) stating that it was not good, while the majority of respondents (64.5%) also stated that it was not good for the HOT-Fit method. It is recommended that the Limboto Community Health Center improve the quality of SIMPUS by focusing more on routine evaluations, improving HR skills, strengthening integration between applications, as well as improving infrastructure and system security.

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INTRODUCTION

According to the Regulation of the Minister of Health of the Republic of Indonesia Number 75 of 2014 concerning Community Health Centers, it is explained that Community Health Centers are health service facilities that carry out public health efforts and first-level individual health efforts, by prioritizing promotive and preventive efforts, to achieve the highest level of public health in their working area. Puskesmas is a technical health implementation unit under the supervision of the District/City Health Service. In general, they must provide preventive, promotive, curative and rehabilitative services either through Individual Health Efforts (UKP) or Community Health Efforts (UKM) (1).

Community Health Centers have an important role in providing quality and affordable health services for the community. In carrying out its functions, Community Health Centers are categorized into two types based on the characteristics of the work area, human resource capabilities and facilities they have. This categorization aims to adapt puskesmas services to the needs and conditions of the community in their

working areas. Community health centers are categorized into inpatient health centers and non-inpatient health centers. An inpatient health center is a health center that is given additional resources to provide inpatient services, according to health service needs. Meanwhile, non-inpatient health centers (outpatient) are health centers that do not provide inpatient services, except for normal delivery assistance.

Based on Law Number 36 of 2009 concerning Health, health information is required to carry out effective and efficient health efforts, and in the Government Regulation of the Republic of Indonesia Number 46 of 2014 concerning Health Information Systems, it is stated that health information systems must be managed by Health Service Facilities for the management of health information systems at the scale of health service facilities.

A management information system (SIM) is an information system that can create output results using inputs and various processes needed to meet certain goals in a management matter. In simple terms, it can be said that an information system processes data and then changes it to form information (2). MIS is an organized combination of people, hardware, software, communication networks and data resources (these five elements are often referred to as information system components) that bring together, replace and publish information in an organization.

The Health Center Management Information System (SIMPUS) is an arrangement that presents information to assist the organizational decision making process in implementing community health center management. The Puskesmas Management Information System is a Puskesmas Management Application where the main function is to manage patient data from the patient registration process, patient registration, patient examinations, and administering medication to patients. The data entered is stored in the patient database which will then be processed according to parameters for reporting needs, such as daily visit reports, payment methods, types of disease and other reports required in Puskesmas Management (3).

If puskesmas management is done manually, it will result in delays in inputting data so that the service process takes a long time, accuracy and data updates are reduced, especially during the process of searching for medical record numbers for patients who do not carry a medical card. Therefore, in community health center management activities it is very important to use SIMPUS (4). Since 2003 the government has issued Presidential Instruction No.3 of 2003 concerning National Policy and Strategy for e-Government Development. E-Government is expected to be able to improve good governance and improve effective and efficient public services. These instructions were given to all heads and leaders of the government of the Republic of Indonesia, including the Regent/Mayor. Each head and government leader is expected to be able to carry out e-Government development within their respective agencies (5).

Applications developed to support health services in providing basic services to the community are placed in each community health center, one of which uses the e-puskesmas application. E-puskesmas is a manifestation of the implementation of the Community Health Center Management Information System (SIMPUS) which is able to make a huge contribution in providing excellent service to patients (6). With the help of information systems, it is hoped that management can help achieve improved health services. The decision to use an information system is in the hands of management, but the success of an information system use depends on the use and acceptance of each individual user. To produce a maximum evaluation, a method is needed, namely the PIECES method and the HOT-Fit method.

The PIECES method and HOT-Fit method are often used by several researchers to evaluate the implementation of information systems based on the desires of users/consumers in using the information system. The PIECES method is used to analyze performance, information, economics, security, efficiency and service in order to identify weaknesses in the current system so that improvements can be made to the new system. The PIECES method is also said to be a framework method used to measure the value of the variables applied and the quality of service of an application. This method is a data analysis technique to measure the value of whether users are satisfied with information system services or not. The advantage of this method is that it has 6 perception points, of course when evaluating and analyzing the system it can be carried out in detail and comprehensively (7). The HOT-Fit method is a method that can be seen as a whole system assessment with 4 important factors, namely Human, Organization, Technology and Benefit. The advantage of this method is that it is a combination of the ISSM (Information System Success Model) and IT Organization Fit methods so that it can measure the success of the system from various aspects (8).

Limboto Community Health Center is one of the outpatient health centers in Gorontalo Regency which has the highest accreditation rating, namely plenary accreditation. The Health Center Management Information System (SIMPUS) has been used by the Limboto Community Health Center since 2019. However, its implementation has not been optimal. SIMPUS at the Limboto Community Health Center also still has application problems, the application often experiences errors, where the SIMPUS application is synchronized with the Satu Sehat application and the BPJS application, usually if the two applications update or bridge during service hours, this results in the SIMPUS application experiencing errors during service hours.

These obstacles result in health workers having to input data manually and if the application has no errors, input will be carried out using the SIMPUS application, resulting in delays and the service process taking a long time. Because the Limboto Community Health Center has been fully accredited, it is hoped that the implementation of SIMPUS at the Limboto Community Health Center will be implemented well and can contribute to the Community Health Center in increasing the effectiveness and efficiency of health services. This research aims to evaluate the implementation of the Community Health Center Management Information System (SIMPUS) implemented at the Limboto Community Health Center using the PIECES method and the HOT-Fit method.

METHODOLOGY

The research was carried out in September-October 2024 at the Limboto Community Health Center. This research uses descriptive research with quantitative research methods. The population in this study were all health workers who used the SIMPUS application at the Limboto Community Health Center, namely 62 health workers. The number of samples in this study is the same as the population, namely 62 people, which were obtained using exhaustive sampling techniques. The data was analyzed descriptively and then presented in the form of a frequency distribution table.

RESULTS

Respondent Characteristics

Distribution of Respondent Characteristics by Age

Table 1. Distribution of Respondents Based on Age

Age Group (Years)	Amount	
	n	%
21-25	11	17,7
26-30	17	27,4
31-35	7	11,3
36-40	13	21,0
41-45	9	14,5
46-50	3	4,8
51-55	2	3,2
Total	62	100,0

Source: Primary Data 2024

Based on Table 1 Distribution of Respondents based on age from 62 respondents, it was found that the dominant age group was the 26-30 year old group with 17 respondents (27.4%), while the smallest age group was 51-55 years old with 2 respondents (3.2%).

Distribution of Respondent Characteristics Based on Gender

Table 2. Distribution of Respondents Based on Gender

Gender	Amount	
	n	%
Female	57	91,9
Male	5	8,1
Total	62	100,0

Source: Primary Data 2024

Based on Table 2, the distribution of respondents based on gender shows that the majority of respondents were female, namely 57 respondents (91.9%) and 5 respondents (8.1%) were male.

Distribution of Respondent Characteristics Based on Position

Table 3. Distribution of Respondents Based on Position

Position	Amount	
	n	%
Midwife	30	48,4
Doctor	3	4,8

Position	Amount	
	n	%
Dentist	1	1,6
Nurse	15	24,2
Person Responsible SIMPUS	1	1,6
Pharmacy	2	3,2
Medical Record	8	12,9
Laboratory Staff	2	3,2
Total	62	100,0

Source: Primary Data 2024

Based on Table 3, the distribution of respondents based on position, of the 62 respondents, the majority were midwives with 30 respondents (48.4%), then dentists with 1 respondent (1.6%) and person responsible SIMPUS with 1 respondent (1.6%).

Distribution of Respondent Characteristics Based on Length of Use of SIMPUS

Table 4. Distribution of Respondents Based on Length of Use of SIMPUS

Length of Use of SIMPUS	Amount	
	n	%
<1 Years	8	12,9
1-3 Years	14	22,6
>3 Years	40	64,5
Total	62	100,0

Source: Primary Data 2024

Based on Table 4, the distribution of respondents based on length of use states that the majority of respondents with a length of use >3 years were 40 respondents (64.5%), then 1-3 years were 14 respondents (22.6%), and <1 year were 8 respondents (12.9%).

Distribution of Respondents' Answers
PIECES Method

Table 5. List of Statements in the Questionnaire

Statements	Code
The available menus and navigation make it easier to use the program	P1
The menus and navigation provided can be executed easily and interactively	P2
The menu is available instantly and can display information as needed	P3
Instructions for easily canceling orders are available when needed	P4
The SIMPUS application is easy to use	I1
The SIMPUS application requires a complicated data input process	I2
The SIMPUS application is easy to learn	I3
The output is easy to read	I4
The SIMPUS application speeds up work completion. (time efficiency)	Ec1
The SIMPUS application has accurate results. (target efficiency)	Ec2
The SIMPUS application saves operational costs. (cost efficiency)	Ec3
By using the SIMPUS application, work becomes easier to complete. (efficiency of energy and thought)	Ec4
The SIMPUS application never experiences errors when used	C1
The SIMPUS application is free from viruses	C2
The data search process is fast	C3
Existing data cannot be changed by users other than officers (data security is guaranteed)	C4
The SIMPUS application meets your needs	Ef1
The SIMPUS application provides information relevant to the rules	Ef2
The SIMPUS application is used in all Puskesmas organizations/agencies in the Gorontalo Regency working area	Ef3

The SIMPUS application provides various benefits for organizations	Ef4
The SIMPUS application can be used easily	S1
Each submenu in the Registration menu can be accessed easily	S2
Information can be accessed easily	S3
By using the Search feature, searching patient data can be done easily	S4
The program is equipped with a system for correcting/updating patient data	S5

Table 6. Distribution of PIECES Method Respondents' Answers

Indicators	Respondent's Answer								Total	
	Strongly Disagree		Disagree		Agree		Strongly Agree		n	%
	n	%	n	%	n	%	n	%		
Performance										
P1	0	0	3	4,8	53	85,5	6	9,7	62	100
P2	0	0	2	3,7	57	91,9	3	4,8	62	100
P3	3	4,8	23	37,1	33	53,2	3	4,8	62	100
P4	9	14,5	25	40,3	24	38,7	4	6,5	62	100
Information										
I1	16	25,8	20	32,3	25	40,3	1	1,6	62	100
I2	23	37,1	25	40,3	12	19,4	2	3,2	62	100
I3	12	19,4	25	40,3	23	37,1	2	3,2	62	100
I4	18	29,0	18	29,0	24	38,7	2	3,2	62	100
Economy										
Ec1	21	33,9	17	27,4	21	33,9	3	4,8	62	100
Ec2	20	32,3	15	24,2	26	41,9	1	1,6	62	100
Ec3	6	9,7	35	56,5	20	32,3	1	1,6	62	100
Ec4	20	32,3	9	14,5	31	50,0	2	3,2	62	100
Control										
C1	20	32,3	28	45,2	14	22,6	0	0	62	100
C2	24	38,7	19	30,6	15	24,2	4	6,5	62	100
C3	27	43,5	16	25,8	19	30,6	0	0	62	100
C4	27	43,5	12	19,4	20	32,3	3	4,8	62	100
Efficiency										
Ef1	8	12,9	28	45,2	24	38,7	2	3,2	62	100
Ef2	2	3,2	11	17,7	48	77,4	1	1,6	62	100
Ef3	16	25,8	23	37,1	21	33,9	2	3,2	62	100
Ef4	20	32,3	17	27,4	25	40,3	0	0	62	100
Service										
S1	0	0	21	33,9	38	61,3	3	4,8	62	100
S2	0	0	9	14,5	51	82,3	2	3,2	62	100
S3	6	9,7	16	25,8	38	61,3	2	3,2	62	100
S4	0	0	23	37,1	38	61,3	1	1,6	62	100
S5	0	0	20	32,3	42	67,7	0	0	62	100

Source: Primary Data 2024

Table 6 shows that of the performance indicators, the majority of respondents agreed that the menu and navigation made it easier to use the program (85,5%), available easily and interactively (91,9%), available instantly can bring up information as needed (53,2%), and instructions to cancel orders are considered difficult (40,3%). From the information indicators, most respondents agreed that the SIMPUS application was easy to use (40,3%), requires a complicated data input process (19,4%), easy to learn (37,1%), easy to read output (38,7%). Of the economic indicators, most respondents agreed that SIMPUS could speed up settlement (33,9%), have accurate results (41,9%), unable to save on operational costs (56,5%), work can be easily completed (50,0%). Of the control indicators, the majority of respondents agreed that SIMPUS had experienced errors when used (45,2%), SIMPUS is not free from viruses (38,7%), The data search process takes a long time (43,5%), Existing data cannot be changed by other users (43,5%). Of the efficiency indicators, the majority of respondents agreed that SIMPUS did not meet their needs

(45,2%), SIMPUS provides relevant information (77,4%), SIMPUS has not been used in all Puskesmas organizations/agencies in the Gorontalo Regency working area (37,1%), SIMPUS provides various benefits for organizations (40,3%). Of the service indicators, most respondents agreed that SIMPUS can be used easily (61,3%), submenus in the registration menu can be accessed easily (82,3%), Information can be accessed easily (61,3%), The search feature can be done easily to search patient data (61,3%), equipped with a system for correcting/updating patient data (67,7%).

HOT-Fit Method

Table 7. List of Statements in the Questionnaire

Statements	Code
I use SIMPUS quite often when I work	H1
I depend on the use of SIMPUS in my work	H2
I feel that when I use the system, I know quite a lot about SIMPUS	H3
I feel that using SIMPUS makes my work quite easier	H4
Overall I am quite satisfied with this SIMPUS	H5
I am quite satisfied with the features, functions and services provided at SIMPUS	H6
SIMPUS is quite good in terms of recording services and reporting	O1
SIMPUS receives support and responsibility from the Head of the Community Health Center for the implementation of Simpus	O2
I feel that the implementation of SIMPUS is in accordance with Government Regulation Number 46 of 2014 concerning Health Information Systems (SIK) which is a system for managing health data and information at all levels of government in a systematic and integrated manner.	O3
The implementation of SIMPUS has improved the relationship between Limboto Community Health Center and other Community Health Centers	O4
I find it easy to use SIMPUS	T1
I find SIMPUS easy to learn	T2
I feel SIMPUS provides a fast response when accessing it	T3
SIMPUS can be accessed 24 hours	T4
I feel SIMPUS is quite stable when used so errors rarely occur	T5
I feel that SIMPUS can maintain all recording and reporting data stored in the database	T6
I feel that SIMPUS provides complete and detailed service and reporting information	T7
I feel that SIMPUS provides accurate service information and reporting	T8
I feel all the data contained in SIMPUS is easy to read	T9
I feel that all the data contained in SIMPUS is in accordance with the data entered	T10
The person in charge of SIMPUS provided a fast and responsive response when I experienced a problem regarding SIMPUS	T11
The person in charge of SIMPUS provides quality and service guarantees related to SIMPUS to me as a user	T12
The person in charge of SIMPUS helped solve my problem regarding SIMPUS until it was resolved	T13
I feel that recording and reporting on community health center programs is more efficient using SIMPUS	Fit1
I feel that recording and reporting on community health center programs is more effective using SIMPUS	Fit2
I feel that SIMPUS can minimize recording and reporting errors at the Community Health Center	Fit3

Table 8 Distribution of Respondents' Answers to the HOT-Fit Method

Indicators	Respondent's Answer								Total	
	Strongly Disagree		Disagree		Agree		Strongly Agree		n	%
	n	%	n	%	n	%	n	%		
Human										

H1	0	0	1	1,6	54	87,1	7	11,3	62	100
H2	0	0	25	40,3	35	56,5	2	3,2	62	100
H3	19	30,6	21	33,9	22	35,5	0	0	62	100
H4	0	0	6	9,7	54	87,1	2	3,2	62	100
H5	26	41,9	18	29,0	17	27,4	1	1,6	62	100
H6	23	37,1	27	43,5	10	16,1	2	3,2	62	100
Organization										
O1	0	0	16	25,8	41	66,1	5	8,1	62	100
O2	7	11,3	10	16,1	44	71,1	1	1,6	62	100
O3	4	6,5	14	22,6	43	69,4	1	1,6	62	100
O4	5	8,1	17	27,4	36	58,1	4	6,5	62	100
Technology										
T1	21	33,9	21	33,9	13	21,0	7	11,3	62	100
T2	26	41,9	16	25,8	19	30,6	1	1,6	62	100
T3	25	40,3	18	29,0	19	30,6	0	0	62	100
T4	22	35,5	26	41,9	13	21,0	1	1,6	62	100
T5	30	48,4	27	43,5	5	8,1	0	0	62	100
T6	28	45,2	14	22,6	17	27,4	3	4,8	62	100
T7	21	33,9	15	24,2	26	41,9	0	0	62	100
T8	20	32,3	19	30,6	23	37,1	0	0	62	100
T9	22	35,5	13	21,0	25	40,3	2	3,2	62	100
T10	21	33,9	16	25,8	25	40,3	0	0	62	100
T11	13	21,0	26	41,9	23	37,1	0	0	62	100
T12	23	37,1	14	22,6	25	40,3	0	0	62	100
T13	22	35,5	13	21,0	27	43,5	0	0	62	100
Benefit										
Fit1	1	1,6	1	1,6	51	82,3	9	14,5	62	100
Fit2	11	17,7	25	40,3	26	41,9	0	0	62	100
Fit3	23	37,1	16	25,8	18	29,0	5	8,1	62	100

Source: Primary Data 2024

Table 8 shows that of the human indicators, the majority of respondents agreed that SIMPUS is often used at work (87,1%), dependency on using SIMPUS while working (56,5%), knowledge about SIMPUS (35,5%), SIMPUS helps in work (87,1%), dissatisfied with the implementation of SIMPUS (41,9%), not satisfied with SIMPUS features, functions and services (43,5%). Of the organizational indicators, most respondents agreed that SIMPUS was quite good in terms of recording services and reporting (66,1%), SIMPUS receives support and responsibility from the Head of the Community Health Center for the implementation of SIMPUS (71,1%), The implementation of SIMPUS is in accordance with Government Regulation Number 46 of 2014 concerning Health Information Systems (SIK), which is a system for managing health data and information at all levels of government in a systematic and integrated manner. (69,4%), SIMPUS improves the relationship between the Limboto Community Health Center and other Community Health Centers (58,1%). Of the technology indicators, most respondents agreed that it was difficult to use SIMPUS (33,9%), SIMPUS is difficult to learn (41,9%), SIMPUS provides a long response when accessing it (40,3%), SIMPUS cannot be accessed for 24 hours (41,9%), SIMPUS is less stable when used so errors often occur (48,4%), SIMPUS can maintain all recording and reporting data stored in the database (45,2%), SIMPUS provides complete and detailed service and reporting information (41,9%), SIMPUS provides accurate service information and reporting (37,1%), All data contained in SIMPUS is easy to read (40,3%), All data contained in SIMPUS corresponds to the data entered (40,3%), The person in charge of SIMPUS provides a fast and responsive response when experiencing problems regarding SIMPUS (41,9%), The person responsible for SIMPUS provides quality guarantees and services related to SIMPUS to users (40,3%), the person in charge of SIMPUS helps resolve problems regarding SIMPUS until they are resolved (43,5%). Of the benefit indicators, most respondents agreed that recording and reporting on community health center programs was more efficient using SIMPUS (82,3%), recording and reporting of community health center programs is more effective using SIMPUS (41,9%), The existence of SIMPUS does not minimize recording and reporting errors at the Community Health Center (37,1%).

SIMPUS evaluation results using the PIECES method

Table 9. SIMPUS Evaluation Results using the PIECES method

PIECES Method	Amount	
	n	**%**
Not good	33	53,2
Good	24	38,7
Very good	5	8,1
Total	62	100,0

Source: Primary Data 2024

Based on table 9, it is found that the majority of respondents received poor scores on the PIECES method, namely 33 respondents (53.2%). Then followed by 24 respondents (38.7%) who got good scores. Meanwhile, the remaining 5 respondents (8.1%) received very good scores

SIMPUS evaluation results using the HOT-Fit method

Table 10. SIMPUS Evaluation Results using the HOT-Fit method

HOT-Fit Method	Amount	
	n	**%**
Not good	40	64,5
Good	18	29,0
Very good	4	6,5
Total	62	100,0

Source: Primary Data 2024

Based on table 10, it is found that the majority of respondents received poor scores on the HOT-Fit method, namely 40 respondents (64.5%). Then followed by 18 respondents (29%) who got good scores. Meanwhile, the remaining 4 respondents (6.5%) received very good scores

DISCUSSION

Evaluation of the Implementation of the Community Health Center Management Information System Using the PIECES Method

Based on the results of research that has been carried out in evaluating the implementation of the community health center information system at the Limboto Community Health Center using the PIECES method with a total of 62 respondents, it can be seen that the majority of respondents are in the poor category, which shows that officers still feel that instructions to cancel orders are considered complicated and have difficulty or confusion in using the order cancellation feature. work, SIMPUS still often experiences errors because the SIMPUS application is synchronized with the Satu Sehat application and the BPJS application so that if the two applications are updating or briging during service hours, the display of information is not responsive enough or in accordance with existing work processes at the health center, and searches only allow searches with limited keywords (for example only based on name), while searches based on other data such as medical record numbers or birth dates are not available or difficult to use.

System requirements analysis focuses on how to identify weaknesses found in the old system. To make it easier to do this, an analysis method using the PIECES framework is used which breaks down into six weaknesses analysis focuses, namely performance, information, economics, control, efficiency and service. The results of the PIECES analysis are a document of system weaknesses which become recommendations for improvements that must be made to systems that will be developed further or for improvements to previous systems (9). System requirements analysis focuses on how to identify weaknesses found in the old system. To make it easier to do this, an analysis method using the PIECES framework is used which breaks down into six weaknesses analysis focuses, namely performance, information, economics, control, efficiency and service. The results of the PIECES analysis are a document of system weaknesses which become recommendations for improvements that must be made to systems that will be developed further or for improvements to previous systems (7).

Based on the research results from the evaluation of the implementation of SIMPUS at the Limboto Community Health Center, it can be seen from each indicator of the PIECES method, namely as follows:

Evaluation of the implementation of SIMPUS at the Limboto Community Health Center based on performance indicators

Based on performance indicators, it is an analysis related to the performance of the information system which is assessed from throughput, response time, audibility, communication frequency, completeness, and error tolerance. In implementing the information system at the Limboto Community Health Center, health workers felt that the instructions for canceling orders were considered complicated and that they had difficulty or were confused in using the order cancellation feature which should be able to be accessed quickly if they needed to cancel an action or order that had already been carried out in the application which made the instructions or cancellation process unintuitive or unclear, so that health workers felt burdened and experienced difficulties.

However, on the other hand, some respondents found it easy to carry out the order cancellation instructions, this was due to several factors, such as the application interface design, the user's technical experience, the availability of information or guidance, and the context of application use. So it is necessary to ensure user-friendly application design, provide clear guidance, and simplify the steps for the cancellation feature to suit different levels of user experience.

Performance is the first variable in the PIECES analysis method. Where it has an important role to assess whether existing processes or procedures can still be improved in performance, and see to what extent and how well an information system is in the process of producing the desired goals (10). The medical record information system is sufficient in carrying out the functions per section according to what is needed and the medical record information system is good at displaying messages if there is data that has not been input, however the medical record information system is still not able to provide the required reports quickly, the medical record information system does not yet have consistency in the use of design and documentation techniques. The response time of the medical record information system is long if more than 1 transaction occurs (11).

Evaluation of the implementation of SIMPUS at the Limboto Community Health Center based on the Information indicator

In terms of information indicators, the process of inputting data in SIMPUS is considered to be still complicated because not all data regarding patients and community health center data can be input into SIMPUS, such as the medical record information system is not yet able to produce information on grouping patients based on age and diagnosis, the presentation of information is not as required so the reporting and statistics department has to export some data into Excel.

Setiap sistem informasi diharapkan dapat meghasilkan informasi yang bermanfaat agar institusi mampu compete with the use of information technology. Useful information has the characteristics of being accurate, complete, relevant and timely. To produce useful information costs/investments are required starting from the acquisition, processing and storage of retrievers and communications (12). Assessment of this information aspect is important because it concerns the information needed by system users, especially health information. Information about health is a very important part of life (13). Based on the results of research conducted at Kunciran Community Health Center, it was found that the ePuskesmas system was not able to directly produce all data according to the format required for reporting. So officers have to carry out data processing manually which will then be handed over to reporting officers to be submitted to the health service (14).

Evaluation of the implementation of SIMPUS at the Limboto Community Health Center in terms of Economic indicators

By using SIMPUS work becomes easier to complete (efficiency of energy and thought). When compared with recording and reporting before SIMPUS, work is now easier because computers and applications are used. However, even though the use of the simpus has been done electronically so that it does not require paper for medical record files and reduces the cost of using paper, using the simpus requires costs for using the internet and computers which are used continuously during working hours so it requires electricity costs to support its use.

Resources, the number of resources used in system development, including human resources and economic resources. Economics, assessing whether currently many procedures can still be used for their benefits (useful value) or reduce the costs of administering them. Economic issues and opportunities are related to problems (10). Using a node there is a budget regarding costs for maintaining the node such as costs and electricity. So the user is responsible for always maintaining and maintaining the node. The Simpus application minimizes the cost of using paper and ink (15).

Evaluation of the implementation of SIMPUS at the Limboto Community Health Center based on the Control indicator

Data that has been entered into SIMPUS cannot be changed by users other than officers (data security is guaranteed). In the SIMPUS application there is security that uses a password to log in to the application because each user already has a username and password according to their access rights so there is no potential for data to be accessed by people who have no interest.

Control, namely a mechanism that controls or protects, is very important in maintaining the confidentiality of data so that it cannot be accessed by other people and protecting data privacy from danger both from inside and outside. With control, all performance problems can be quickly repaired (15). Mechanisms that control or protect programs and data. Controllers are installed to improve system efficiency, prevent or detect system errors, and ensure data security. Supervision assesses whether existing procedures can be further improved, thereby improving the quality of supervision and increasing the ability to detect errors/fraud (16).

However, this does not mean that SIMPUS never experiences errors when used. In this case, the SIMPUS at the Limboto Community Health Center still often experiences errors because the SIMPUS application is synchronized with the Satu Sehat application and the BPJS application. Usually, if the two applications are updated or brought up during service hours, this has an impact on the SIMPUS application which experiences errors during service hours. SIMPUS often experiences errors caused by network errors, resulting in all computers and laptops at the Puskesmas not being able to be used. This requires users to delay importing patient data and ultimately files pile up (17).

Evaluation of the implementation of SIMPUS at the Limboto Community Health Center based on the efficiency indicator

SIMPUS at the Limboto Community Health Center is able to provide information that is appropriate and related to applicable rules or guidelines so that it can assist in making valid and appropriate decisions.

Efficiency relates to how these resources can be used optimally. Operations in a company are said to be efficient or not, usually based on the duties and responsibilities in carrying out activities. Usability, the effort required to learn, operate, prepare input, and interpret the output of a program while maintainability, the effort required to find and correct errors in a program (18). Implementation of the Community Health Center Management Information System from the efficiency aspect at the Batang-Batang Community Health Center, Sumenep, there are differences in the use of computerized and manual information systems, the registration information system is running efficiently, and SOPs are in place. The implementation is in accordance with what the user wants (19).

Evaluation of the implementation of SIMPUS at the Limboto Community Health Center in terms of Service indicators

The registration submenu is located in a strategic position in the application interface, so it is easy for users to find. Usually this includes the main menu or menu that is visible first when the user enters the application. However, the search feature only allows searches using limited keywords (for example only by name), while searches based on other data such as medical record numbers or birth dates are not available or difficult to use. If the search feature experiences errors, such as not being able to find data even though the data is there, or the system frequently crashes, this will certainly take time and disturb user comfort.

There are several obstacles that can affect data quality, namely operational design constraints in the work organization in each information flow, namely from collecting, processing, reporting, and lagging information, lack of human resources, if this is not immediately addressed it will have an impact on the services to be provided. SIMPUS will not run optimally because the application of computer-based technology is closely related to the suitability of hardware, software and brainware. In general, software is created based on user needs. The system needs to be updated to minimize errors. If errors occur frequently, it will impact the accuracy of the health center in making reports. A good Puskesmas Management Information System will minimize data errors and make it easier for users so that staff can serve patients in a timely manner (20). Respondents assessed that the number of help menus for operating or troubleshooting instructions for operating the SIMKA application was available in small quantities. The availability of an adequate help menu in the application will really help users in correcting or repairing errors that occur during the data input and output process (21).

The advantage of the PIECES method is that the PIECES method can evaluate various important aspects of the system, such as performance, control and service, which provides a comprehensive picture of SIMPUS quality. By analyzing various dimensions, this method helps in finding specific problems in the system, such as poor performance or errors in information control. The PIECES method can also be applied in various types of applications/systems, including those used in community health centers. Then, the weakness of the PIECES method is that the evaluation of several categories, such as control and service,

often depends on the perception of the individual carrying out the evaluation. Although comprehensive, PIECES may not delve into more detailed technical issues related to the hardware or software used in SIMPUS. The PIECES method requires accurate and complete data to provide a valid evaluation, which can be a challenge if the required data is difficult to obtain at the community health center.

Evaluation of the Implementation of the Community Health Center Management Information System Using the HOT-Fit Method

Based on the results of research that has been carried out in evaluating the implementation of the community health center information system at the Limboto Community Health Center using the HOT-Fit method with a total of 62 respondents, it can be seen that the majority of respondents are in the poor category, which shows that officers still feel that there are several features that are incomplete, such as in medical records which are not yet able to produce information on grouping patients based on age and diagnosis, the application of SIMPUS does not directly affect communication or collaboration between community health centers. Even though SIMPUS improves internal efficiency within a community health center, it does not guarantee increased relationships or synergy between different community health centers. Officers feel that when using SIMPUS, errors often occur during service hours, resulting in delays and the service process taking a long time.

The HOT-Fit evaluation method is a method that is assessed from three main variables, namely humans, organizations and technology. The system success method adopted is based on specific categories of comprehensive assessment, extensive validation of the Health Information System (SIK) assessment. And also, IT organizational relevance methods are required to incorporate the concept of appropriateness with assessment factors (human, organizational and technological) (3).

SIMPUS has been supported in its implementation, such as supporting the provision of necessary information technology infrastructure such as servers, networks and other hardware that supports SIMPUS operations. There is an SOP regarding service policies for the central health center section at gas-operated health centers, namely based on Minister of Health Regulation No. 56 of 2014 concerning Guidelines for Managing Health Data and Information at Community Health Centers. This regulation explains further about health data management at community health centers, including recording, reporting and the use of information technology in health data management (22).

Based on the research results from the evaluation of the implementation of SIMPUS at the Limboto Community Health Center, it can be seen from each indicator of the HOT-Fit method, namely as follows:

Evaluation of the implementation of SIMPUS at the Limboto Health Center based on human indicators

SIMPUS is currently used quite often in daily work activities or processes so that its use has become commonplace or routine when working. Apart from that, SIMPUS also makes it easier to carry out work. Using SIMPUS is considered effective and helps make work easier and more efficient. However, there are several features that are not yet complete, such as the medical record which is not able to produce information on grouping patients based on age and diagnosis.

Humans assess information systems in terms of system use, frequency and breadth of functions and investigations of information systems. System use is also related to who uses it, level of use, training, knowledge, expectations and attitudes towards accepting or rejecting the system. This component also assesses the system from the aspect of user satisfaction. User satisfaction can be related to the user's perceived usefulness and attitude towards the information system which is influenced by personal characteristics (23). User Satisfaction is the perception of System users which can be obtained from the user's overall evaluation and experience in using the System. Most of the Key Informants said that their experience when using SIMPUS made their work very easy. Overall user satisfaction has not been met, because not all SIMPUS users feel the benefits of SIMPUS. This is because not all service data can be input, resulting in the resulting information being incomplete, inaccurate and not timely, even though SIMPUS can be used very easily (24).

Evaluation of the implementation of SIMPUS at the Limboto Health Center based on organizational indicators

In implementing SIMPUS, the head of the community health center has an important role in ensuring that the implementation of SIMPUS runs smoothly, including providing the necessary support and responsibility for the success and continuity of the system at the community health center. Basically, SIMPUS is a system used to facilitate the management of data and information within the community health center itself. However, the implementation of the SIMPUS does not directly affect communication or collaboration between community health centers. Although SIMPUS improves internal efficiency within a puskesmas, it does not guarantee improved relationships or synergy between different puskesmas. To

improve relations between puskesmas, other steps or systems are needed that facilitate interaction between puskesmas, not just by implementing simpus at each puskesmas.

Organizational support and policies greatly determine the development of information systems. It can also be said that the success or failure of implementing information depends on the policies and support provided by the leadership or management in an organization (25). The application of SIMPUS at the Kedungmundu Semarang Community Health Center in the organizational characteristics of the evaluation of the implementation of the Community Health Center Management Information System in Kedungmundu Semarang includes, among other things, teamwork showing satisfactory results in the use of the information management system or SIMPUS, the support of top management and each other's officers providing good results. However, the organizational environment does not yet appear to be connected to this implementation (26).

Evaluation of the implementation of SIMPUS at the Limboto Health Center based on technology indicators

Regarding service quality, the person in charge of SIMPUS must be able to identify problems or obstacles that arise in the implementation, maintenance or use of the system at the community health center. The person in charge is tasked with finding solutions or ways to overcome these problems which can involve technical improvements to the system, providing further training to staff, or making policy adjustments. The person in charge of SIMPUS has a very important role in ensuring that problems that arise related to SIMPUS can be resolved completely, so that the system can run efficiently and effectively at the puskesmas. Meanwhile, the quality of the system when using SIMPUS still often experiences errors during service hours, resulting in delays and the service process taking a long time.

Criteria that can be used to assess the quality of information include completeness, accuracy, timeliness, availability, relevance, consistency and data entry. Meanwhile, service quality focuses on the overall support received by the system or technology service provider. Service quality can be assessed by speed of response, guarantee, empathy and service follow-up (23). In conducting research on Human, Organizational and Technological Factors in Using the SIMPUS Application for Patient Registration at the Mulyorejo Community Health Center, Surabaya, the majority of respondents considered that the SIMPUS application support to speed up patient registration service times was still not optimal. Delays still occur because the SIMPUS application often experiences errors when used (27).

Evaluation of the implementation of SIMPUS at the Limboto Health Center based on the Benefit indicator

The process of recording data and reporting related to programs run at community health centers becomes faster, easier and more organized by using SIMPUS. SIMPUS is an application or system designed to assist health workers at community health centers in recording patient information, health data, and compiling health program reports in a more structured manner. By using SIMPUS, work that was previously done manually can be done automatically and more coordinated, thereby increasing efficiency and accuracy in implementing programs at community health centers.

A system is said to be successful when the system used provides benefits to users. So that users can feel the benefits of the system and users must feel satisfied with the system. Benefits are a continuity between positive and negative impacts from system users. The performance of the node is influenced by indicators such as direct perceived benefits to work, efficiency and effectiveness as well as reducing the system error rate. The higher the positive impact produced, the more successful the implementation of the information system (28). SIMPUS Purwoyoso Semarang provides very good benefits, namely facilitating and helping patient services starting from registration, registration, examination (diagnosis) and patient treatment so that there is no accumulation of patients. SIMPUS can also reduce errors in the manual recording process. This improves the quality of services which is useful for supporting the improvement of services at the Purwoyoso Semarang node (19).

The advantage of the HOT-Fit method is that this method considers human (user), organizational and technological aspects simultaneously, which is very important for SIMPUS evaluation in community health centers, where interaction between medical staff, management and technology is vital. The HOT-Fit method assesses user skills and the match between the system and user needs, which is relevant for community health centers where staff training and readiness are key to system success. Evaluation of this method also looks at the suitability of the system with the structure and policies of the organization (puskesmas), which is very important to ensure that SIMPUS can function well in that context. The weakness is that this method places less emphasis on technical aspects or system performance, such as software or hardware efficiency, which is also important in SIMPUS evaluation. In order to provide a comprehensive evaluation, the HOT-Fit method requires a deeper understanding of how people, organizations, and technology interact, which can require a lot of time and resources. The HOT-Fit method may take less account of external factors that may influence

the SIMPUS system, such as government regulations or broader health policies.

CONCLUSIONS

Based on research conducted regarding the evaluation of the implementation of the Community Health Center Management Information System (SIMPUS) using the PIECES method and the HOT-Fit method at the Limboto Community Health Center, it can be concluded that:

Evaluation of the Implementation of the Community Health Center Management Information System Using the PIECES Method, it was found that the majority of respondents received poor scores on the PIECES method, namely 33 respondents (53.2%). Then followed by 24 respondents (38.7%) who got good scores. Meanwhile, the remaining 5 respondents (8.1%) received very good scores.

Evaluation of the Implementation of the Community Health Center Management Information System Using the HOT-Fit Method, it was found that the majority of respondents received poor scores on the HOT-Fit method, namely 40 respondents (64.5%). Then followed by 18 respondents (29%) who got good scores. Meanwhile, the remaining 4 respondents (6.5%) received very good scores.

It is recommended that the Limboto Community Health Center improve the quality of SIMPUS by focusing more on routine evaluations, improving HR skills, strengthening integration between applications, as well as improving infrastructure and system security.

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