

ANALYSIS OF USER SATISFACTION TO NO QUEUE HEALTH SERVICE (*PUSKESMAS TANPA ANTRIAN/ “PUSTAKA”*) USING THE END USER COMPUTING METHOD IN SEMARANG

Zefan Adiputra Golo, Asharul Fahyudi, Setya Wijayanta

Department of Medical Record and Health Information, Health Polytechnics
Ministry of Health Semarang, Central Java, Indonesia

ABSTRACT

Background: No queue health service (*Puskesmas Tanpa Antrian/ “PUSTAKA”*) program which has been implemented since 2018 in each area of the Semarang City Health Center has not been optimal. The problem is that patients find it difficult to understand the flow of patient registration using PUSTAKA at the registration counter, as well as complaints from families of elderly patients who are limited in the use of information technology. This study aims to analyze the factors that influence the satisfaction of users of the PUSTAKA application by using the end user computing satisfaction (EUCS).

Subjects and Method: This was a cross sectional study conducted in Semarang, Central Java. A total of 100 patients were selected for this study. The dependent variable was user satisfaction. The independent variable were content, accuracy, format, ease of use, and timeliness. The data were collected by questionnaire and analyze by chi-square.

Results: Patient satisfaction in using PUSTAKA was associated with accuracy (OR= 2.26; 95% CI= 1.01 to 5.10; p= 0.047) and ease of use (OR= 3.16; 95% CI= 1.23 to 8.16; p= 0.017), and both results were statistically significant.

Conclusion: Accuracy and ease of use were associated with patient satisfaction in using PUSTAKA.

Keywords: PUSTAKA, EUCS, primary healthcare, patients.

Correspondence:

Zefan Adiputra Golo. Department of Medical Record, Health Polytechnics, Ministry of Health Semarang. Jl. Tirta Agung, Banyumanik, Kota Semarang. Email: zefanadiputra91@gmail.com. Mobile: 082191130656.

BACKGROUND

One of the principles of organizing a Primary Healthcare Center (*Puskesmas*) is the use of appropriate technology. The principle of appropriate technology must be applied by *Puskesmas* to facilitate access to public health services, thereby improving the quality of its services (Kemenkes RI, 2019). One of the applications of appropriate technology principles is by utilizing information technology in health services such as the use of mobile health for patient registration services. *Puskesmas*

is one of the first level health care facilities most visited by the community. This can be proven from the large number of patient queues every day at the *Puskesmas* to get health services. The long queue of patients will have an impact on the discomfort of the community when coming to the *Puskesmas*, so that it will cause patient dissatisfaction with *puskesmas* services. User satisfaction is decisive in the success of an information system and affects the perceived benefits (Aggelidis and Chatzoglou, 2012)

The phenomenon of long-patient queues has encouraged the Semarang City Health Office to create an innovative online registration system for Puskesmas in Semarang City, where since 2018 Puskesmas in Semarang City has implemented mobile health facilities in patient registration services. This facility is applied in an innovation program, namely the Semarang City Queueless Health Center (PUSTAKA). This program is a facility that makes it easier for people to register, where the main goal is to reduce the queue of patients in puskesmas outpatient services in Semarang City. After running for four years, the Semarang City No-Queue Puskesmas Program implemented in every Puskesmas in Semarang City is still not optimal (Prameswati et al., 2019). The results of the preliminary study found that the obstacle that is still often experienced by the community as PUSTAKA users is that this application has not been able to provide a definite time related to the arrival of patients at the Puskesmas so that it makes patients have to wait at the registration counter, most patients are dissatisfied because of the system that often errors and there are differences in some steps of the flow of implementing registration services with PUSTAKA, and complaints from elderly patients who are limited in the use of technology.

According to Rouhani et al. (2018) and Castillo et al. (2022), one of the methods that can be used to measure user satisfaction with an information system is End User Computing Satisfaction (EUCS). This method can measure the level of user satisfaction of an information system

application by comparing the expectations and realities of users of an information system that is applied in improving access to health services, so that through measuring user satisfaction, evaluation and improvement of information systems can be carried out (Farras, 2022).

Based on the problems, research is needed to evaluate how successful the implementation of this program is through measuring patient satisfaction of users of Puskesmas Tanpa Antrian Kota Semarang (PUSTAKA). The purpose of this study is to analyze the factors that affect patient satisfaction of PUSTAKA users using the EUCS method which consists of five aspects, namely content aspects, format aspects, accuracy aspects, timeliness aspects and user convenience aspects.

SUBJECTS AND METHOD

1. Study Design

This was a cross sectional study conducted in Semarang from August to October 2022.

2. Population and Sample

The population in this study was all patients who had used the PUSTAKA application. A number of 100 patients was selected by quota sampling.

3. Study Variable

The dependent variables are patient satisfaction of PUSTAKA users. The independent variables were content, format, accuracy, timeliness, and ease of use.

4. Operational Definition of Variables

PUSTAKA is a facility for the convenience of the community to seek treatment at the Community Health Center without having to wait in line.

5. Study Instruments

Data collection uses research instruments in the form of questionnaires developed from the EUCS method and have been tested for validity and reliability before.

6. Data Analysis

Data analysis using logistical binary tests using SPSS.

RESULTS

1. Univariate Analysis

Based on table 1, it can be seen that the age of respondents is more in the range of 17-25 years (34%) and 26-35 years (31%), female respondents (70%) are more than male respondents (30%), respondents' education is more at the high school level (43%) and respondents' jobs are more as private employees (31%).

Table 1. Characteristics Sample

Characteristic	n	%
Age		
17 – 25 years	34	34
26 - 35 years	31	31
36 – 45 years	17	17
46 – 55 years	12	12
>55 years	6	6
Gender		
Man	30	30.0
Woman	70	70.0
Education		
Senior High School	43	43.0
Diploma 3	13	13.0
Diploma 4 / Bachelor	33	33.0
Magister	8	8.0
Doctor	3	3.0
Work		
Students	16	16.0
Civil servant	25	25.0
Private Employees	31	31.0
Self-Employees	28	28.0
Content		
Good	77	77%
Bad	23	23%
Format		
Good	51	51%
Bad	49	49%
Accuracy		
Good	61	61%
Bad	39	39%
Timeliness		
Precise	76	76%
Not Precise	24	24%
Ease of Use		
Easy	85	85%
Not Easy	15	15%
Patient Satisfaction		
Satisfied	83	83%
Unsatisfied	17	17%

The content variable is in the good category (77%), format is in the good category (51%), Accuracy is in the good category (61%), Timeliness is in the precise category (76%), and ease of use is in the easy category (85%). Meanwhile, the patient satisfaction variable was in the satisfied category (83%).

1. Multivariate Analysis

Table 2. shows the results of logistic regression analysis, where from the analysis of the five aspects of EUCS are only aspects of accuracy (OR= 2.26; 95% CI= 1.01 to 5.10; p = 0.04) and ease of use (OR = 3.16; 95% CI = 1.23 to 8.16; p= 0.017) has a significant effect on patient satisfaction in using PUSTAKA.

Table 2. Results of Logistic Regression Analysis

Variable	OR	95% CI		p
		Lower Limit	Upper Limit	
Content	0.84	0.36	1.93	0.679
Format	0.87	0.43	1.81	0.725
Accuracy	2.27	1.01	5.10	0.047
Timeliness	1.14	0.66	1.95	0.643
Ease of use	3.16	1.23	8.16	0.017
Constant	0.001			0.007

DISCUSSION

In this study researchers have selected respondents who have heterogeneous backgrounds in terms of age, gender, level of education and occupation. This is done to help the results of this study become more objective and find a broad picture of the perception of the PUSTAKA.

From the results of this study, it has been found that the implementation of the Semarang City Queueless Puskesmas System has not fully met the expectations and needs of patients as users of this application. This is shown from the fact that there are still patients who have the perception that the content, format and accuracy aspects are still poor, the timeliness aspect is not right and from the ease of use aspect that the patient perceives is still not easy to use. Overall, the satisfaction of PUSTAKA users is indeed in the satisfied category, but there are still 17% of patients, espe-

cially those who are young, who are not satisfied. The success factor of implementing PUSTAKA as a patient registration information system lies in the satisfaction of its end users. This is in accordance with previous research conducted by Sevtiyani and Fatikasari (2020) related to user satisfaction of information systems in primary health services using the same method.

The results of the logistic regression analysis to test the hypothesis of this study found that of the five aspects of EUCS, only the aspects of accuracy and ease of use had a significant influence ($p < 0.05$) on patient satisfaction of PUSTAKA users in the four primary health services. The accuracy aspect has a meaning related to the information produced can be error-free. The accuracy aspect measures user satisfaction through data accuracy when a system receives input and is then processed into information (Alfiansyah et al., 2020). This study found that patients are often

dissatisfied because when using it, there are errors in the system and the data produced is not accurate.

The ease of use aspect is an important aspect to measure the extent of an application's ease of use, design and access to the application (Heilman and Brusa, 2006). The findings of this study show that the perception of some patients actually states that using PUSTAKA makes it more difficult for them to register for primary health care and stay in line when they come to the registration counter. This finding needs attention because according to Munap et al. (2018) and Chang et al. (2015) ease of use is one of the factors that represents EUCS as a whole. Users who are satisfied with the ease of use of a system are expected to be satisfied with the system as a whole. In addition, if the end user finds an easy-to-use system, then it will be possible for them to become loyal users and more able to take advantage of the application in the future (Karimi et al., 2015).

Patient satisfaction with PUSTAKA shows the extent to which people as users are satisfied with this application because it can meet their needs and expectations (Fong and Ho, 2014). User satisfaction according to Golo et al. (2021) is a factor that determines the successful implementation of an information system in health services. If there is patient dissatisfaction with PUSTAKA, then it can be the basis for evaluating the extent to which this application is in accordance with the needs of the community in terms of registration when needing health services at the Puskesmas. PUSTAKA is important in supporting the digital

transformation of health services in Indonesia, this system is very helpful for the community in facilitating public accessibility to health services. Further research is needed on the acceptance rate of PUSTAKA both from the perspective of patients and health workers at puskesmas.

AUTHOR CONTRIBUTION

All authors contributed to this study

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CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

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