Impelemtation E-Health System on Use Behavior Customer based on Unified Theory of Accepptance and Use of Technology (UTAUT)

by Djazuly Chalidyanto

Implementation E-Health System on Use Behavior Customer based on Unified Theory of Acceptance and Use of Technology (Utaut)

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ABSTRACT

Surabaya is a pioneer of E-Health innovation in Indonesia by providing online registration system to facilitate to take a quenue number anytime anywhere. The user online registration at RSUD dr.M. Soewandhie Surabaya is the largest, but dissatisfaction figure of online registration services reached 31.4%. Therefore, the purpose of this research is to analyze use behavior online registration at RSUD dr.M. Soewandhie based on Unified Theory of Acceptance and Use of Technology (UTAUT). This research was an analytic observational with quantitative approach and cross sectional design. Sample were collected by systematic random sampling and consist of 50 users and 50 nonusers. The result showed that individual characteristic which has p value below 0.05 was experience, knowledge and IT skills. Performance expectancy (p = 0,044) significantly influence behavioral intention, whereas effort expectancy (p = 0,982) and social influence (p = 0,124) do not. Facilitating condition (p = 0,812) and behavioral intention (p=0,189) had no influence with use behavior because p value was above 0.05. In conclusion, performance expectancy has a significant influence with behavioral intention, thereforeexperience, knowledge and IT skills had influence with use behavior online registration in RSUD dr.M. Soewandhie Surabaya.

Keyword: E-Health, Online registration, Unified Theory of Acceptance and Use of Technology, Use behavior

INTRODUCTION

Global health services are considered as the largest priority service industry and a huge investment that is growing rapidly in most countries. E-health or electronic health is one of innovations undertaken to overcome these obstacles. E-Health essentially driven by the use of information and communication technologies in health has the potential to transform worldwide health industry in terms of infrastructure, cost and service quality[1]. E-health is defined as the use of information and communication technologies (ICT) for health[2]. WHO encourages each country to develop long-term strategic plans to develop E-Health services in various health fields for health administration, legal and regulatory framework, also public and private partnership infrastructure mechanisms.

E-Health Innovation in Indonesia is pioneered by Surabaya City Government with the aim of making it easy for people to come to Puskesmas and hospitals to register online. So, there is no more long queues occur and the patients can estimate the time to come to health facilities as they wish.

The example of e-Health application in Surabaya City is online registration system with the aims to facilitate the people who will come to the Puskesmas or Government Hospital to registered by online.

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Based on online queue at www.surabaya-ehealth.com, the enthusiasm of Surabaya society in using the online registration system is quite high the following are the five government-owned health facilities with the highest online queue users in March 2016 presented in Table 1.

Table 1. The big five of health care facilities with the highest number of online registration user in Surabaya 2016

No.	Health Facilities	Users Online
1.	RSUD dr. M. Soewandhie	3069
2.	Puskesmas Jagir	1009
3.	Puskesmas Ketabang	703
4.	RSUD Bhakti Dharma Husada	326
5.	Puskesmas Simomulyo	231

(Sumber: website surabaya-ehealth, 2016)

In Table 1 it can be seen that online registration system in RSUD dr. M. Soewandhi runs with an average user 154 people per day. RSUD dr. M. Soewandhie has E-Kios machine facility connected to e-health online registration website, so that the patients can choose to do online registration through e-kios or manually by taking the queue number provided in hospital.

Researchers collected the initial data by survey on 35 users of E-Kiosk machine and obtain that equal to 68.6% online registration users with E-Kios machine was satisfied. While 31.4% of users are not satisfied when using the E-Kios machine. Respondents' reason for their dissatisfaction is because sometimes E-Kios machine is error and the connection is slow, besides the instruction of machine is not easy to be understood by some people so they need help from officer or other user. So it is necessary to do a research to evaluate the attitude of public acceptance in using online registration system facility to avoid online registration system users getting low.

Venkatesh suggested that user acceptance of a new information system is influenced by various factors so that a model called Unified Theory of Acceptance and Use of Technology (UTAUT) is developed. This study aims to analyze the users behavior of online registration system (E-Health) in dr. M. Soewandhi Surabaya that has been running for more than one year. It is hoped that with the use of UTAUT model, this research can determine the influence of factors in the model[3].

MATERIAL AND METHOD

This research is an analytic observational research by using cross sectional research. The research was held in RSUD dr. M. Soewandhi Surabaya. The time of this research is conducted for two months. The population in this study is the people who visited RSUD dr. M. Soewandie Surabaya with an average visit of 2774 people per month. Sample of this study was 100 people who divided into two groups, the user group of 50 people and the non-user group of 50 people.

The sampling technique used is simple random sampling. Primary data obtained using survey method by giving questionnaire which is modification of research[3]. The statistical test is conducted to see the effect of independent variable consist of individual characteristic, performance expectancy, effort expectancy, social influence and facilitating condition. Dependent variable of this research is use behavior and behavioral intention

FINDINGS

Characteristics of respondent

Characteristics of respondents assessed in this study are age, sex, education, job, experience, knowledge of E-health, and IT skills. Based on the results in table 2 shows that the age of respondents in the non-user group and users group of online registration is about ≥ 51 years old.

Age can affect a person in using health services because age differences have different risk of illness[5]. So most users of health services in RSUD dr. M. Soewandhie is elderly with age category about ≥ 51 years old.

Table 2. Characteristics of respondents who used in RSUD dr.M. Soewandi Surabaya 2017

Characteristics of Respondents	User Group		Non User Group		Total		p
	n	%	n	%	n	%	
Age							
< 20 years old	1	2	1	2	2	2	0,241
21-35 years old	10	20	13	26	23	23	
36-50 years old	13	26	17	34	30	30	
> 51 years old	26	52	19	38	45	45	
Sex							
Female	31	62	32	64	63	63	0,836
Male	19	38	18	36	37	37	
Last education							
Elementary school	6	12	8	16	14	14	0,186
Junior high school	10	20	12	24	22	22	
Senior high school	20	40	22	44	42	42	
Bachelor	14	28	8	16	22	22	
Job							
Civil Servent	3	6	0	0	3	3	0,803
Private employees	13	26	16	32	29	29	
Housewife	20	40	24	48	44	44	
Entrepreneur	4	8	5	10	9	9	
Et all	10	20	5	10	15	15	
Knowledge							
High	29	58	6	12	35	41	0,000
Sufficient	18	36	30	60	48	48	
Low	3	6	14	28	17	17	
IT experience							
Good	39	78	25	50	64	64	0,004
Less good	11	22	25	50	36	36	
Experience							
Never	0	0	50	100	50	100	0,000
1-3 time(s)	28	56	0	0	28	56	
4-6 times	7	14	0	0	7	14	
>6 times	15	30	0	0	15	30	

Most of respondents are female. The education level of respondents is mostly high school, university and junior high school with majority of work as housewife. In online registration users group mostly have a high knowledge of E-Health and have a good IT skills. While the majority of non-user groups have a sufficient level of E-Health knowledge and IT skills with 50% percentage good and 50% less good.

The test results of factors that influence the characteristics of user's use behavior there are three variables that have p <0.05 those are experience, IT skills and knowledge of E-Health. It can be concluded that experience variables, IT skills and knowledge significantly influence the use behavior of online registration users. Ability is the capacity of the individual to do the various tasks they receive. IT capabilities required in operating e-kios machine is browsing the Internet and use of electronic devices based on touch screen. So users with high IT capabilities can influence the use of online registration system.

The one of important individual characteristics in individual acceptance is the experience of using similar products before. This means that users with high experience have great individual acceptance. In addition to experience factors, knowledge is one of the predisposing factors for behavior[7]. The better knowledge of E-Health users have, the easier it is to register online.

Table 3. Use Behaviour Customer Based Unified Theory of Accepptance and Use of Technology to Implementation E-health System in RSUD dr.M. Soewandi Surabaya 2017

Characteristics of Respondents	User Group		Non User Group		p
	n	%	N	%	
Performance Expectancy					
Not good	4	8	2	4	0,044
Good	46	92	48	96	
Effort Expectancy					
Not good	2	4	4	8	0,982
Good	48	96	46	92	
Social Influence					
Not Influenced the social environment	13	26	13	26	0,124
Influenced the social environment	37	74	37	74	
Facilitating Conditions					
Not good	11	22	12	24	0,812
Good	39	78	38	76	
Behavioral Intention					
Low	10	20	5	10	0,189
High	40	80	45	90	

Performance expectancy

Performance expectancy is a level of confidence in using technology can improve the person's performance. There are four indicators, they are the perception of the benefits, increase satisfaction, save time and provide benefits. That mostly user groups provide good assessment with 92% percentage while non user group is 96%. The results of user and non-user ratings of performance expectancy are good categories. So it can be concluded that the respondents of user groups and non users group feel that the benefits of E-Health can simplify the registration process. Based on the result of statistical test, performance expectancy variable have value (p <0,05) means that it gives significant influence to behavioral intention.

Effort Expectancy

Effort Expectancy is the perception of ease associated with the use of technology level, while the indicators used in the assessment are ease of visit planning, machine operation, ease of learning and speed of service compared to manual. Mostly user groups of

96% and non-user groups 92% gave good ratings. So that respondents feel that the use of online registration can provide convenience in obtaining services in the hospital.

The ease of use of a system will affect the intention to use the system[6]. This study found different result that is effort expectancy has p>0,05 so it does not give significant effect to behavioral intention. The examines user acceptance in analyzing and designing a system also finds insignificant influence between effort expectancy and behavioral intention[6].

Social Influence

Assessment of social influence can determine the degree to which the individual feels influenced by the social environment in using the technology can be assessed with three indicators, they are the use of seeing other people, the use of being told by others and the belief in helping others when experiencing the difficulties in operating technology. In the table above can be seen that the majority of user groups and non-user groups have affected the social environment with a percentage of 74%.

The results of this study are in line with this statement because user and non-user groups assess that they are affected by the social environment in decision making use of e-health. However, the statistical count with the influence test results obtained p>0,05 so that the social influence variable does not significantly influence the behavioral intention.

Facilitating Condition

The conditions that facilitate users in using information technology systems is one of the factors that affect the utilization of information technology systems. Indicators used in the assessment of facilitating conditions include the physical appearance of the E-Kios machine, internet connection, clear menu display and queuing printing process. Most user groups provide good ratings with 78% percentage while non user group is 76%. However, based on the statistical test the effect of facilitating condition variable on the use behavior has p> 0,05 so the facilitating condition variable has no effect on use behavior. UTAUT theory constructing facilitating conditions when moderated by age and experience will have a significant effect on use behavior[1].

Behavioral Intention

Behavioral Intention is the power of one's intention to perform certain behaviors, including the desire to use in the next opportunity to give positive comments and recommend technology to others. The majority of non-user groups have high intentions by the percentage of 90%. Furthermore, 10% of non-user groups have low intentions. In high-intention category, users have a percentage of 80% and low-intention categories of 20%. The result of statistical test shows that p> 0,05 so it can be concluded that behavioral intention does not affect the use behavior.

The results are not in line with the theory of UTAUT and which states that behavioral intention affect the use behavior. This can be due to the implementation of online registration has not been implemented optimally because some applicants choose to use the manual way[8].

CONCLUSION

The results showed that the characteristics of respondents who influence the use of E-Health are the experience, knowledge and IT skills. While the factor which influence the behavior intention of the use of online registration is performance expectancy. So respondents who consider to use online registration can increase the satisfaction, profit and time savings waiting. Surabaya City Government can use the results of this research to optimize the implementation of online registration system or E-Health. The suggestions that can be given are the government needs to do some socialization about the advantages of online registration to the community through an interesting media so it is expected to increase knowledge and foster the interest of the community to register online.

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