Original Article

Factors Affecting the Utilization of Hospital Management Information System in PKU Muhammadiyah Bantul General Hospital

Yeni Komalasari [1]

[1] Faculty of Public Health, Ahmad Dahlan University, Yogyakarta
Corresponding Author: yenikomala2701@gmail.com

Abstract

Hospitals are important institution in organizing health system in Indonesia. Because of its important role, it is crucial to ensure the data credibility. Therefore, protected by law, hospitals obliged to maintain their system information. This study conducted adopting *Technology Acceptance Model* (TAM) variable. This study was held in Bantul Regional General Hospital using cross sectional approach. Population of this study is all staff who are identified to be involved in the use of hospital management information system in PKU Muhammadiyah Bantul General Hospital as much as 325 staff. Sample were taken using proportionate stratified random sampling as much as 85 staff. Research data obtained by distributing questionnaires and analyzed using chi square and Mann Whitney test. Univariate analysis showed not good perceived benefit (58,8%), good perceived ease of use (52,9%) and not good attitude of using (69,4%). Bivariate analysis showed variables affecting utilization of hospitals management information system are perceived benefit (p=0,001), perceived ease of use (p=0,018) and attitude of using (p=0,021). Multivariate analysis showed the most affecting variables towards utilization of hospitals management information system are perceived benefit (p=0,008) and perceived of ease use (p=0,049).

Keywords: TAM Method, Hospital Management Information System

Background

Information system technology has encouraged and influenced the health services needed to meet the demands of society for the accuracy and speed of services provided by hospitals. Hospitals as health services are expected to be able to provide maximum service to the community. The Ministry of Health of the Republic of Indonesia has issued policies that serve as guidelines for the implementation of health development carried out by the government and the private sector to improve the quality of health services in hospitals, under the Regulation of the Ministry of Health of the Republic of Indonesia Number 1171 / MENKES / PER / VI / 2011 Article 1 Paragraph 1 which states that "Every hospital is obliged to implement a Hospital Information System"[1].

One important element in implementing an information system is user acceptance of the information system. For an organization, the information system serves as a tool for achieving organizational goals through the provision of information. The success of an information system is not only determined by how the system can process input and produce information well but also how users are willing to accept and use it, to achieve organizational goals[2].

This research will be conducted by adopting the variable Technology Acceptance Model (TAM). Theoretically and practically, TAM is a model that is considered the most appropriate in explaining how users receive a system. TAM is a model that is built to analyze and understand the factors that affect the acceptance of computer technology users. TAM was first introduced by Fred Davis in 1986. TAM states that behavioral intention to use is determined by two beliefs, namely: first, perceived benefit which is defined as the

extent, to which a person believes that using the system will improve performance. Second, perceived ease of use is defined as the extent, to which a person believes that the use of the system is easy. TAM also states that the impact of external variables on an intention to use is mediated by perceived benefit and perceived ease of use. The TAM concept also states that perceived benefit is influenced by perceived ease of use[3].

The hospital management information system of PKU Muhammadiyah Bantul Hospital has been integrated and has been implemented since 1998 with three system changes, namely in 2007, 2010, and the last one in 2015. The programs used are different from year to year, namely Underdog, Linux, Desktop, and web. The replacement was carried out for system development because the old system had difficulties to use and the old system management was more difficult.

In implementing the new system, there are problems from user factors, namely employees experiencing different perceptions of benefits, difficulties in operating the new system, the process of adapting from the old system to the new system, because in making the system in each unit is different, not ergonomic, not following what owned by the user so there will be changes because the user cannot change and the user does not respond. Some employees accept or do not accept the system and some employees reject the system because employees do not know the use or function of the system that will benefit other units.

Research Method

This research use quantitative method with cross-sectional approach to determine the factors that influence the use of hospital management information systems. This research was conducted in July-August 2018. The population in this study were all staff identified to be involved in the use of hospital management information systems at PKU Muhammadiyah Bantul Hospital, totaling 325 employees. Samples were taken with a proportionate stratified random sampling technique of 85 employees. This study used a research instrument in the form of a questionnaire which was adopted purely from Palupi (2015). Validity and reliability which adopted the pure research Palupi (2015) obtained Cronbach Alpha of perception of benefits 0.717, Perceived ease of use 0.793, attitude of using 0,753 and the use of management information systems home pain 0,711. The results of the questionnaire are valid and reliable to be used as a research instrument. The data analysis used was univariate and bivariate. Bivariate analysis using chi-square the 2x3 table test, the terms of the test chi-square are cells that have an expected value of less than five, a maximum of 20% of the number of cells, if the requirements are chi-square not met then an alternative 2x3 table test is performed, namely Mann-Whitney[4].

Result Result

Univariate Analysis
The number of respondents in this study was 85 respondents with respondent characteristics based on gender, age, and education level. Based on the results of the research, the characteristics of respondents based on gender indicated that 69 or 81.2% of respondents were female and 16 or 18.8% were male. The results of the characteristics of respondents based on age indicated that most of the respondents ranged between the ages of 35 years and 38 years, namely 17 respondents with a percentage of 20.0%. The results of the characteristics of the respondents based on the level of education of the majority of the respondents have an educational background of Diploma III / Bachelor degree, namely as many as 73 with a percentage of 85.9%.

Based on the study result, the perception of the benefits of the hospital management information system at PKU Muhammadiyah Bantul Hospital was said to be in a not good category, namely 50 with a percentage of 58.8% while in the good category, namely 35 with a percentage of 41.2%. Based on the study result, the perception of the ease of use of the hospital management information system at PKU Muhammadiyah Bantul Hospital was said to be in the good category, namely 45 with a percentage of 52.9%, while in the not good category of 40 with a percentage of 47.1%.

Based on the study result, the attitude in using the hospital management information system at PKU Muhammadiyah Bantul Hospital was in a not good category, namely 59 with a percentage of 69.4%, while in the good category, it was 26 with a percentage of 30.6%. Based on the study result, the use of the hospital management information system at PKU Muhammadiyah Bantul Hospital was in the moderate category, namely 67 with a percentage of 78.8% while in the high category, it was 8 with a percentage of 9.4% and in the low category, it was 10 with a percentage of 11. 8%.

Bivariate Analysis
The effect of perceived benefits on the use of hospital management information systems

Statistical analysis for 2x3 tables that do not meet the Chi-Square requirements so that another alternative test is used, which is Mann Whitney test. The results of the Mann Whitney test statistical analysis between perceived benefits on the use of the hospital management information system can be seen in table 1 as follows:

Table 1. The effect of perceived benefits on the use of hospital management information systems (HIMS) in PKU Muhammadiyah Bantul Regional General Hospital

Perceived Benefit	HMIS Utilization						Total		P Value
	Low		Mid		High				
	n	%	n	%	n	%	n	%	
Not good	9	18,0	40	80,0	1	2,0	50	100	
Good	1	2,9	27	77,1	7	20,0	35	100	0,001
Total	10	11,8	67	78,8	8	9,4	85	100	

Source: Primary Data, 2018

Based on the results of the bivariate analysis in table 1, it can be seen that the perceived benefits that are not good for the low use of HMIS are 9 respondents with a percentage of 18.0%, the perceived benefits are not good for moderate HMIS use as much 40 respondents with a percentage of 80.0% and perceived benefits that were not good for the use of high HMIS were 1 respondent with a percentage of 2.0%.

While the perceived benefits that are good for the use of HMIS are low by 1 respondent with a percentage of 2.9%, the perceived benefits that are good for the use of HMIS are 27 respondents with a percentage of 77.1% and perceived benefits. (Perceived benefits) which are good for the high use of HMIS as many as 7 respondents with a percentage of 20%. Statistically, it is known that the p-value <α (0.05) is 0.001, so the hypothesis is accepted, which means that there is an influence between perceived benefits on the use of the hospital management information system at PKU Muhammadiyah Bantul Hospital..

The effect of perceived ease of use on the use of hospital management information systems

Statistical analysis for 2x3 tables that do not meet the Chi-Square requirements so that another alternative test is used, which is Mann Whitney test. The results of the Mann Whitney test statistical analysis between perceived ease of use on the use of hospital management information systems can be seen in table 14 as follows:

Table 2. The effect of perceived ease of use on the use of hospital management information systems

Perceived ease of use	HMIS Utilization						Total		P Value
	Low		Mid		High				
	n	%	n	%	n	%	n	%	
Not good	7	17,5	32	80,0	1	2,5	40	100	
Good	3	6,7	35	77,8	7	15,6	45	100	0,018
Total	10	11,8	67	78,8	8	9,4	85	100	

Based on the bivariate analysis in table 2, it can be seen that the perceived ease of use that is not good for the use of low HMIS is as many as 7 respondents with a percentage of 17.5%, the perceived ease of use are not good for the use of moderate HMIS as many as 32 respondents with a percentage of 80, 0%, and the perceived ease of use that is

not good for the use of high HMIS is 1 respondent with a percentage of 2.5%.

While the perceived ease of use is good for the use of low HMIS as many as 3 respondents with a percentage of 6.7%, the perceived ease of use is good for the use of moderate HMIS as many as 35 respondents with a percentage of 77.8%, the perceived ease of use is good for The high use of HMIS was 7 respondents with a percentage of 15.6%.

Statistically, it is known that the p-value $<\alpha$ (0.05) is 0.018, so the hypothesis is accepted, which means that there is an influence between perceived ease of use on the use of hospital management information systems at PKU Muhammadiyah Bantul Hospital.

The effect of attitude of using on the use of hospital management information systems

Analisis statistik untuk tabel 2x3 yang tidak memenuhi syarat *Chi-Square* dengan uji alternatif lain yaitu uji *Mann Whitney*. Hasil analisis statistik uji *Mann Whitney* antara sikap (*attitude toward using*) terhadap penggunaan sistem informasi manajemen rumah sakit dapat dilihat pada tabel 15 sebagai berikut:

Table 3. The effect of attitude of using on the use of hospital management information systems

Attitude of Using	HMIS Utilization						Total		P Value
	Low		Mid		High				
	n	%	n	%	n	%	n	%	
Not Good	7	11,9	51	86,4	1	1,7	59	100	
Good	3	11,5	16	61,5	7	26,9	26	100	0,021
Total	10	11,8	67	78,8	8	9,4	85	100	

Based on the bivariate analysis in table 3, it can be seen that the attitude of using that is not good towards the use of HMIS is low as many as 7 respondents with a percentage of 11.9%, bad attitude of using towards the use of moderate HMIS as many as 51 with a percentage of 86.4% and attitude of using 1 respondent with bad towards the use of HMIS with a percentage of 1.7%. While a good attitude of using towards the use of HMIS is low as many as 3 respondents with a percentage of 11.5%, a good attitude of using towards the use of HMIS is as many as 16 respondents with a percentage of 61.5%, and a good attitude of using towards the use of HMIS. 7 respondents with a high percentage of 26.9%. Statistically, it is known that the p-value $<\alpha$ (0.05) is 0.021, so the hypothesis is accepted, which means that there is an influence between the attitude of using on the use of hospital management information systems at PKU Muhammadiyah Bantul Hospital.

Discussion

From the statistical test results, the p-value (0.001) $<\alpha$ (0.05), then the hypothesis is accepted. This shows that

From the statistical results, it is known that the p-value $<\alpha$ (0.05) is 0.018, so the hypothesis is accepted,

there is an influence between the perceived benefits on the use of the hospital management information system at PKU Muhammadiyah Bantul Hospital. This happens because employees believe in the use of technology that can increase the work productivity of the people who use it. The results of this study are consistent with the research conducted by Handayani and Harsono[5] which states that computer self-efficacy affects perceived benefits. This phenomenon can occur because employees have high confidence that the use of computerization will provide benefits for the completion of their work so that employees can achieve the desired performance. Perceived benefit is the degree to which a person believes that using the system can improve its performance in work[6]. Perceived benefit is defined as a measure where the use of technology is believed to provide benefits for people who use it and the perception of usefulness as a user's subjective ability in the future where using a specific application system will improve performance in the organizational context. Perceived usefulness is a level where someone believes that the use of a certain technology will provide benefits or have a positive impact that will be obtained when using the technology[7].

which means that there is an influence between perceived ease of use on the use of hospital management information

systems at PKU Muhammadiyah Bantul Hospital. This shows the perceived ease of use in using the hospital management information system at PKU Muhammadiyah Bantul Hospital, it is easy to use and easy to understand. Ease of use of the hospital management information system will reduce effort (both time and effort) in doing work. Someone who works using a hospital management information system will be easier than someone who works without a hospital management information system. The results of this study are following the research conducted by Palupi[8] which states that perceived ease of use affects the use of HMIS in Prof. RSO. Dr. R. Soeharso Surakarta. Someone using the new system works easier than someone using the old system. Users believe that information technology is more flexible, easy to understand, and easy to operate (compatible) as characteristics of ease of use. Perceived ease of use is the degree to which a person believes that using such a system does not need to bother[6]. Perceived ease of use is defined as a measure in which a person believes that the computer can be easily understood and used. Perceived ease is defined as the extent to which a person believes that using technology will be free from an effort so that if someone believes that information systems are easy to use then he will use it and vice versa[7].

From the statistical results, it is known that the p-value $<\alpha$ (0.05) is 0.021, so the hypothesis is accepted, which means that there is an influence between the attitude of using on the use of hospital management information systems at PKU Muhammadiyah Bantul Hospital. This happens because employees still accept and are willing to use the hospital management information system and try to be more skilled in using it. The results of this study are following research conducted by Supriono[9] which states that attitudes have a significant effect on the use of information systems. The attitude to use information systems has a high effect, meaning that the higher the attitude to use the system, the higher the use of the system. The attitude of using something is an attitude of liking or disliking the use of a product. The like or dislike of a product can be used to predict the behavior of a person's intention to use a product or not use it. Attitude toward technology is defined as the user's evaluation of their interest in using technology[10].

REFERENCES

1. Puspitasari, N, Permanasari, A. E, Nugroho, H. A, 2013, Analisis Penerapan Sistem Informasi Manajemen Rumah Sakit Menggunakan Metode UTAUT dan TTF, *JNTETI*, Vol.2, No. 4 , ISSN: 2301 – 4156.

2. Rohmadi, WA, B. S, Henderi, 2017, Evaluasi Sistem Informasi Rumah Sakit Untuk Mengetahui Minat Pengguna Dengan Metode UTAUT*, Jurnal Informa Politeknik Indonusa Surakarta*, Vol. 3, No 1, ISSN: 2442-7942.

3. Cholil, M, 2017, Aplikasi Technology Acceptance Model Pada Sistem Informasi Manajemen Rumah Sakit*, Jurnal Bisnis & Manajemen,* Vol. 17, No. 1, ISSN: 81 – 102.

4. Dahlan, M. Sopiyudin, 2014, Statistik Untuk Kedokteran dan Kesehatan, Jakarta: Epidemiologi Indonesia.

5. Handayani, W, P, P, Harsono, M, 2016, Aplikasi Technology Acceptance Model (TAM) Pada Komputerisasi Kegiatan Pertanahan, *Jurnal Economia*, Vol. 12, No. 1, Hal 13-22.

6. Hakam, F, 2016, *Analisis Perancangan dan Evaluasi Sistem Informasi Kesehatan*, Yogyakarta: Gosyen Publishing.

7. Hendra, J, R, Iskandar. A, 2016, Aplikasi Model TAM Terhadap Pengguna Layanan Internet Banking di Kantor Bank Jatim Cabang Situbondo, *Jurnal Ecobuss*, Vol. 4, No. 1, Hal 40-48.

8. Palupi, R, 2016, "Hubungan Persepsi Manfaat, Persepsi Kemudahan Penggunaan Dan Sikap Pengguna Dengan Penggunaan Aktual Sistem Informasi Manajemen Rumah Sakit (HMIS)", *Tesis*, Universitas Sebelas Maret, Surakarta.

9. Supriono, 2015, Pengaruh Sikap, Norma Subyektif, Persepsi Penggunaan dan Persepsi Kemudahan Penggunaan Terhadap Penggunaan Sistem Informasi Akuntansi Dengan Minat Penggunaan Sebagai Variabel Moderasi*, Jurnal Ekonomi dan Teknik Informatika*, Vol. 3, No. 5, Hal 54-68.

10. Armanda, R, 2015, Analisis Faktor Penerimaan dan Penggunaan Teknologi dalam Sistem Informasi Akuntansi Dengan Pendekatan TAM*, Jurnal Ilmu dan Riset Akuntansi*, Vol. 4, No. 3.