Relationship Of System Quality To User Satisfaction Through The Implementation Of Electric Medical Record At RSGM Unsoed

Kharin Anggraheni Putri[1*], Refius Pradipta Setyanto[2], Budi Aji[3]

[1*]Universitas Jenderal Soedirman, anggraheni.putri@mhs.unsoed.ac.id, Indonesia
[2]Universitas Jenderal Soedirman, refius.setyanto@unsoed.ac.id, Indonesia
[3]Universitas Jenderal Soedirman, budi.aji57@gmail.com, Indonesia
* Kharin Anggraheni Putri

ABSTRACT

RSGM Unsoed is one of the most complex public service providers by providing promotive, preventive,curative and rehabilitative health services. To carry out its duties and functions, hospitals need to besupported by effective and efficient technology to accelerate the process of health services. One way iswith the role or function of electronic medical records. The problem that often arises when the medicalrecord information system is still not integrated is the lack of linkagebetweeneach health serviceprovider in terms of information in medical records. In fact, patients can have health checks at differenthealth care providers at a certain time. If there is no connection between each health care provider, thesame examination will occur over and over again. Whereas previous medical record data is very useful insubsequent health checks. This greatly helps reduce the possibility of errors in service. This study aims toanalyze the relationship between system quality and user satisfaction through the implementation ofelectronic medical records at RSGM Unsoed. This research uses quantitative analysis with cross sectionalstudy method. This research uses quantitative analysis with cross sectional study method. The sampling technique used saturated sampling to select 30 research respondents. Data collection using a questionnairetool. The results and implications of the study indicate that the quality of the system has a positiveinfluence on user satisfaction. The better the quality of the system used, the easier it is for paramedics tohelptreatpatientsappropriately.

Keywords: System Quality, User Satisfaction, Electronic Medical Records

1. Introduction

1.1 Background

RSGM Unsoed is one of the most complex public service providers by providing promotive, preventive, curative and rehabilitative health services. To carry out its duties and functions, hospitals need to be supported by effective and efficient technology to accelerate the process of health services. One way is with the role or function of electronic medical records.

The problem that often arises when the medical record information system is still not integrated is the lack of linkage between each health service provider in terms of information in medical records.

In fact, patients can have health checks at different health care providers at a certain time. If there is no link between each health care provider, the same examination will occur over and over again. Whereas previous medical record data is very useful in subsequent health checks. This greatly helps reduce the possibility of errors in service.

The quality of the system is one of the research variables because the quality of the system means the quality of the combination of hardware and software in the information system. The focus is the performance of the system, which refers to how well the capabilities of the hardware, software, policies, procedures of the information system can provide the information needs of users (DeLone, 1992). This variable is measured by Livari (2005) indicators, namely system flexibility, system integration, response time (time to response), error recovery, convenience of access, and language. (languages).

With these problems, it is necessary to design an electronic medical record system that accommodates a patient's medical record in a centralized database. Centralized storage referred to here is a situation where outpatient and inpatient medical records are stored in one file and in one storage database. Integrated or centralized electronic medical records can improve the quality of systems, information, and services.

Based on this background, it is necessary to conduct research on the relationship between system quality and user satisfaction through the implementation of electronic medical records at RSGM Unsoed.

1.2 Problem Formulation

Based on the background and problem formulation, it is necessary to conduct research on the relationship between system quality and user satisfaction through the implementation of electronic medical records at RSGM Unsoed in order to improve service quality at RSGM Unsoed.

2. Literature Review

2.1 Electronic Medical Record (RME)

Medical records are information, data and information regarding patient demographics, patient medical history and medical actions that have been given to the patient concerned. Along with technological advances, the guidelines are now starting to shift from manual medical records to electronic medical records. Hospital management departments use advances in information technology to develop a comprehensive hospital management information system (SIMRS). These advances have given birth to a new paradigm of health information management including electronic medical record management, which has changed the way of thinking of medical record professionals, health information management experts, legal practitioners and archivists and behavior (Handiwidjojo, 2015).

Electronic medical record is a patient's lifetime medical record in electronic format about a person's health information written by one or more health workers in an integrated manner in every meeting between health workers and clients. Electronic medical records can be accessed by computers from a network with the main aim of providing or improving efficient and integrated health care and services (Hadiyanto, 2020).

2.2 Health Workers Satisfaction

Health worker satisfaction is a person's feeling of pleasure or disappointment that arises after comparing the performance (outcome) of the product being thought of against the expected performance (or result). If the performance of electronic medical records is below expectations, the health workers as users are not satisfied. If the performance of the electronic medical record meets expectations, the health worker as a user is satisfied. If the performance of the electronic medical record exceeds expectations, the user is very satisfied or happy (Kotler 2006).

Seddon (1997) states that the use of information systems such as electronic medical records is a behavior that arises as a result of the benefits of using the information system. The behavior resulting from the use of this electronic medical record in the next process is expected to have an impact on individual performance. The success of a hospital's electronic medical record depends on how the system is run, the ease of the system for its users, and the use of technology used. (Goodhue, 1995). The satisfaction of end users of information systems such as electronic medical records can be used as a measure of the success of an information system (Doll, 1988).

In evaluating satisfaction with a particular system, it generally refers to various factors. Factors that are often used in evaluating satisfaction with a product or system (Tjiptono, 2005) include: Performance, Features, Reliability, Conformance to specifications, Durability, Serviceability, Aesthetics, Perceived quality.

The satisfaction of health workers as users is related to the success of the quality of the system that will be generated by electronic medical records. The quality of the system can affect the satisfaction of electronic medical record users. The better the quality of the resulting system, the more user satisfaction with the electronic medical record will increase. An electronic medical record information system can be relied upon if it has a good system quality and is able to provide satisfaction to the user. The failure of an information system may be due to the inability of a system to meet user expectations. Health worker satisfaction is a step to improve health services to achieve the expected goals in accordance with the knowledge possessed by health workers.

2.3 System Quality

System quality is a characteristic of the inherent information about the system itself. System quality means the quality of the combination of hardware and software in an information system (DeLone and McLean, 1992). Gowinda (2011) shows that system quality has a positive effect on user satisfaction. The quality of a good e-filling system will affect the use of the system. If the quality of the e-filling system is reliable, users will repeat the use of the e-filling system in the future.

The quality of the system has a very important role, because the better the quality of the system it will produce quality information for user needs. This shows that the operational performance of the system is considered better, and vice versa if the system cannot produce quality information, it can be said that the system has failed. System quality in this study is defined as the interrelationship of features in the system including performance and user interface

2.4 System Usage

The use of the system is a person's behavior in using the system. The use of this information system shows the decision to use information systems by users in completing user tasks (Davis, 1989). In

DeLone and McLean's success model it is assumed that the quality of information systems and the quality of information produced can affect the use of information systems. If the quality of the system and the quality of the information produced by the system is getting better, then user satisfaction will tend to increase, so that the intensity of using the system will increase.

The use of the system should precede user satisfaction in terms of processes, but a positive experience with the use of the system will lead to greater user satisfaction in terms of causality. Likewise, the increase in user satisfaction will encourage to increase the intensity of the use of information systems. The use of the system relates to who uses it, the level of use, the attitude of accepting and rejecting an information system. The use of this system is related to the implementation of mandatory or voluntary use of information systems.

Davis (1989) laid out a basic model of technology acceptance based on the use of technology and its impact on individuals. A technology is said to be successful if it is acceptable which is indicated by the desire to use it and leads to use. Utami and Samopa (2013), Wang and Liao (2007) show that the use of the system has a positive effect on net benefits. Almuatairi and Subramanian (2005), and Livari (2005) show that there is a positive relationship between use and individual impact.

The use of information systems that have been developed refers to how often users use information systems. The more often users use information systems, usually followed by the more degrees of learning that users get about information systems (Mc Gill et al., 2005). This increase in the degree of learning is one indicator that there is an influence of the existence of the system on the quality of users (individual impact), so that it will have an impact not only on individuals but on organizational performance.

3. ResearchMethodology

According to Sugiyono (2007: 1), the research method is basically a scientific way to obtain data with certain goals and uses. This study uses a descriptive research method with a quantitative approach, with a Cross Sectional Study design. Descriptive research is research to describe things that happen or are studied in a population. The dependent variable in this study is the satisfaction of health workers as operators and the independent variable is the quality of the system.

Population according to Sugiyono (2008:117) is a generalization area consisting of objects or subjects that have certain qualities and characteristics determined by researchers to be studied and then drawn conclusions.

The population in this study were Electronic Medical Record (RME) users at RSGMP Unsoed including students of the dental profession for the 2020 period. In this study, samples were taken from the entire population, namely 30 students of the dental profession for the 2020 period, RME users. To obtain data in this study, data collection techniques were carried out by distributing questionnaires, observation, and literature study. The data collected in the form of statements and numbers will be analyzed by statistical methods to answer the hypothesis on each research variable.

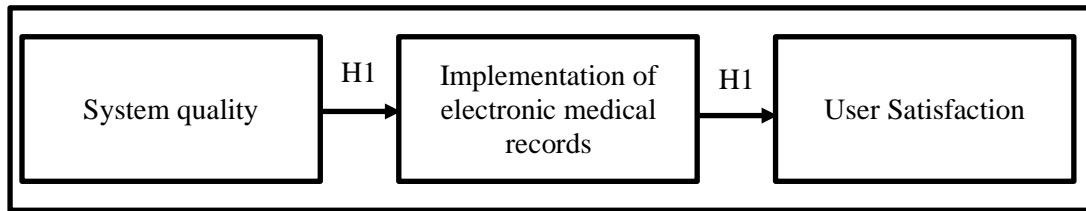*3.1 Hypothesis Framework*

The picture of this research model is:

| System quality | → H1 → | Implementation of electronic medical records | → H1 → | User Satisfaction |

Figure 1.

Model		UnstandardizedCoefficients		Standardized Coefficients	t	Sig.
		B	Std.Error	Beta		
1	(Constant)	273.168	43.761		6.242	.000
	Kualitas system	1.185	.525	.381	2.255	.032

Table 1

4. Results

This study uses regression analysis with assistance for data processing using SPSS version 22 software.To determine the relationship between variables used a simple linear regression test as follows:

The results of this study indicate that the quality of the system has an influence on user satisfaction. This is evidenced by the larger T-count compared to the table (2.255>1.185). Factors that affect the quality of the system such as ease of use, ease of learning, speed of access, system reliability, flexibility, usability of features and functions, and security of clinical information systems have an influence on user satisfaction.
Based on the table above, the following simple linear regression equation is obtained:

$$Y = 273.168 + 1.185 \tag{1}$$

Based on the simple linear regression equation above, it is known:
- The constant value is 273.168, meaning that if the system quality value is 1.185, the user satisfaction value is 273.168
- The regression coefficient value of the quality of the system is 1.185, which is positive, meaning that if the quality of the system is increased by 1 unit, user satisfaction will increase by 1.185.

The coefficient of determination (R^2) serves to measure how far the model's ability to explain the variation of the dependent variable (Y). The value of the coefficient of determination is between 0 and 1. The value of R^2 which is close to one means that the independent variable in the study provides almost all the information needed to predict the variation of the dependent variable (Y).

Model Summary

Model	R	RSquare	Adjusted RSquare	Std. Error of theEstimate
1	.974a	.854	.396	.00057

a.Predictors:(Constant), System quality

b.DependentVariable: User satisfaction

Based on the results shown above, it is known that the R value obtained is 0.674 indicating that the relationship between X and Y is relatively strong because the R value produced is close to 1. The R Square value obtained is 0.854 which means that the effect of X on Y is 0.454 = 85, 4% and the remaining 14.6% are influenced by factors other than X which are not included in the model. Based on the table model summary, it can be concluded that the quality of the system has an effect of 85.4% on customer satisfaction. While the remaining 14.6% is influenced by other variables.

5. Discussion

The results of this study indicate that the variable X or system quality partially has a positive effect on user satisfaction. This can be seen from the t-test value, where the value of tcount (2.255) >ttable (1.697) and the t-value is positive, also supported by a significance value less than 0.05. This shows that the increasing quality of the system will affect customer satisfaction will increase, thus one of the factors that affect customer satisfaction is the quality of the system.

The results of this study are supported by Tilahun, B. (2015), the results of this study reveal that the use of EMR by health professionals is low and they are generally dissatisfied with the system services implemented. The results of this study indicate that this dissatisfaction is mainly and largely due to poor service quality, current practice of dual documentation (EMR and paper-based), and the use of a part-departmental system in hospitals. This is also supported by research by Ayebazibwe. (2019) states that the analyzed data supports five of the nine hypotheses and shows that system quality and attitudes have a significant positive effect on system use and user satisfaction, while system use has a positive significant effect on satisfaction. However, user background and information quality do not have a significant effect on the use or satisfaction of DHIS2 Tracker.

The results of this study are in accordance with the results of Kader and Ali (2017) on the Evaluation of Information System Performance Provision in the Public Education Sector. The quality of the system has a significant relationship to user satisfaction (Kader and Ali, 2017). Gowinda (2011) also shows that the quality of the system has a positive effect on user satisfaction. The quality of the e-filling system can affect user satisfaction. If a high-quality e-filling system that includes easy to use, fast, reliable, flexible, and secure access to protect user data, users of the e-filling system will be satisfied. This statement is in accordance with the research of DeLone and McLean (1992), Seddon and Kiew (1994), Livari (2005), Subramanian (2005), Roldan and Leal (2003) that system quality can affect user satisfaction.

The quality of the system has a very important role, because the better the quality of the system it will produce quality information for user needs. This shows that the operational performance of the system is considered better, and vice versa if the system cannot produce quality information, it can be said that the system has failed. System quality in this study is defined as the

interrelationship of features in the system including performance and user interface.

6. Conclusion

The quality of the system can be something that is very considered in providing reliable information for users. Based on the problems at RSGM Unsoed regarding the medical record information system that is still not integrated and there is no linkage between each health service provider in terms of information on medical records, it is found that the quality of the system affects user satisfaction. So it can be implied that if RSGM Unsoed can improve the quality of the system, it will affect user satisfaction so that related parties need to make periodic improvements to the quality of the system so that the information obtained is always reliable.

Acknowledgements

References

Delone, W. H., Mclean, E. R. (2003). The Delone And Mclean Model Of Information Systems Success: A Ten-Year Update. *Journal Of Management Information Systems*, 19:9-30.

Doll, W. J., Torkzadeh, G. (1988). The Measurement Of End-User Computing Satisfaction. *Mis Quarterly*.

Erawantini, F. (2013). Rekam Medis Elektronik: Telaah Manfaat Dalam Konteks Pelayanan Kesehatan Dasar. *FIKI 2013*, 1(1).

Hadiyanto, M., Purnami, C. T., & Mawarni, A. (2020). Hubungan Kualitas Informasi Sistem Rekam Medis Rawat Jalan Elektronik Dengan Kepuasan Pengguna Di Rsud Dr.(Hc) Ir. Soekarno. *Jurnal Kesehatan Masyarakat (Undip)*, 8(6), 739-745.

Hadiyanto, M., Purnami, C.T., Mawarni, A. (2020). Hubungan Kualitas Informasi Sistem Rekam Medis Rawat Jalan ElektronikDengan Kepuasan Pengguna Di Rsud Dr. (H.C) Ir. Soekarno. *Jurnal Kesehatan Masyarakat (E-Journal),* 8(6):739-745.

Handiwidjojo, W., 2009, Rekam Medis Elektronik, Jurnal EKSIS, 2(1): 36-41.

Kader, M.A.R.A., Ali, R. (2017). Evaluating The Provision Of Information System Performance In The Public Education Sector: An Extension Of Delone And Mclean Model. Gading journal for the social sciences, 16, 1-22.

Kotler, P., Keller, K. L. (2006). Manajemen Pemasaran Jilid 1. Bayumedia Publishing: Malang.

Livari, Juhani. (2005). An Empirical Test of the DeLone and McLean Model of Information System Success, Database for Advances in Information Systems. Spring, 36(2): 8-27.

Mcgill, T. J., Hobbs, V., Klobas, J. E. (2005) User Developed Applications And Information Systems Success: A Test Of Delone And Mclean's Model. Information Resources Management Journal, 16(1): 24-45.

Purwandi, I. D. (2018). Evaluasi Penerimaan Pengguna Terhadap Penerapan Rekam Medis Elektronik Dengan Pendekatan Technology Acceptance Model (TAM) Di Unit Rawat Jalan. Universitas

Muhammadiyah Yogyakarta. Universitas Muhammadiyah Yogyakarta.

Puspitasari, T. D., PUTRA, D., & Roziqin, M. C. (2017). Penerapan Analisis Jalur Kepuasan Pengguna Terhadap Intensitas Pengguna SIMRS. Jurnal Sistem Informasi Bisnis, 2, 131-138.

Putra, D. S. H. (2017). Penerapan Path Analysis Kualitas Informasi Terhadap Kepuasan Pengguna Dan Intensitas Pengguna Dengan Metode Delone & Mclean Di Rumah Sakit Paru Jember Tahun 2017. Jurnal Kesehatan, 5(3), 129-137.

Putra, D. S. H., Seosetidjo, A., & Bukhori, S. (2017). Penerapan Path Analysis Kualitas Sistem Terhadap Kepuasan Pengguna Dan Intensitas Pengguna Dengan Metode Delone & Mclean Di Rumah Sakit Paru Jember Tahun 2017. Jurnal Kesehatan, 5(2), 68-76.