Original Research Article

User Satisfaction Management Information System Hospitals in Kuala Pembuang Regional General Hospital

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ABSTRACT

A computer-based Management Information System for hospitals is very important. Data was obtained that there were 89 hospitals (3%) that reported already having SIMRS but not running functionally, 294 hospitals (10%) did not have SIMRS, and 365 hospitals (12%) did not report SIMRS. Most of the employees are 20 – 35 years old. The purpose of this study is to determine the relationship between the age of the hospital management information system, the quality of the information, the quality of the system, and the quality of services provided to patients at Kuala Pembuang Hospital. This study uses cross-sectional design and observational analytical methods. For the sampling technique used the type probability sampling with 89 participants. Chi-square analysis results showed the value of age p values (p= 0.587), system quality (p= 0.000), information quality (p= 0.000) and service quality (p= 0.000). The results of multivariate analysis with logistic regression showed the p and ExpB values of the information quality variable (p=0.000, Exp B=10.267). There is a substantial relationship between user satisfaction with system quality, information quality, and service quality. In addition, there is no significant relationship between age and user satisfaction of the hospital management information system at Kuala Pembuang Hospital.

Keywords: Age, system quality, information quality, service quality, user satisfaction

INTRODUCTION

In this digital age, hospitals need to install computer-based Management Information Systems. This is supported by the increasing complexity of difficulties associated with the management of medical data and patient administration. If it is connected with accreditation, where health workers must ensure that the provision of care is always centered on patient safety it requires simplification of a fast and efficient coordination network, both in medical decision making and management decisions through an integrated management information system. In addition Kitsios[1] stated that the widespread use of Hospital Management Information Systems (SIMRS) will support health professionals to improve the efficiency and effectiveness of services, improve service quality and provide several benefits such as cost reduction and patient empowerment.

The Hospital Management Information System (SIMRS) is a communication information technology system as referred to in Article 1 of the Permenkes Number 82 of 2013,[2] processing and integrating the entire flow of the hospital service process in the form of a coordination network, reporting, and administrative procedures. To obtain accurate and timely information. SIMRS is developed by the requirements outlined in the aforementioned article true. One of the elements that make up the Health Information System is called SIMRS. By the provisions of article 4 of Minister of Health Regulation Number 82 of 2013,[2] all hospitals are expected to participate in the implementation and development of SIMRS. For SIMRS to be successfully implemented, managed, and developed, the health care process in hospitals needs to be improved and supported. Components such as speed, accuracy, integration, service improvement, increased efficiency, ease of reporting in operational implementation, ease of handling, fast decision making, accurate and fast problem identification, and ease of reporting are included in this process. However, this list is not exhaustive. The formulation of managerial implementation methods and work culture, together with transparency, cross-unit

cooperation, knowledge of the system, and reduction of administrative costs, are all necessary for the successful implementation of the organization. The author claims that SIMRS is an integrated information technology system that paves the way for the development of collaborative environments and ecosystems. This is done to increase the efficiency of health institutions in carrying out daily tasks.

The purpose of the Strategic Information Management and Reporting System (SIMRS) is to reduce the burden of administrative work in hospitals. This applies to the process of recording patient care medically and financially, as well as the process of managing human resources (HR), assets, and other aspects related to the hospital process.[3] Because during this time it is generally considered that the procedure of paying patients and patients back takes a long time, especially if they still use manual patterns.[4] With the help of the Hospital Management Information System, tasks such as recording, counting, and reporting can all be completed more quickly and accurately. There will be greater pressure placed on the system as a result of the increasing number of patients and the increasing volume of administrative work as hospitals continue to expand.[5]

As of July 1, 2020, it is known that 2,177 out of a total of 2,925 hospitals in Indonesia have an operational SIMRS system. This information was obtained from the Online Hospital section of the Ministry of Health's website. This figure covers 74% of the total number of medical facilities in Indonesia. A total of 365 hospitals did not report having a SIMRS, 294 hospitals did not report having a SIMRS, and 89 hospitals claimed to have a SIMRS but it was not functioning properly, indicating that the use of SIMRS is still not optimal. Thus concluding that many hospitals have not implemented or have attempted to build and develop SIMRS, but have not been able to run it optimally. this will be a problem in improving hospital services and it is necessary to solve the problem as soon as possible.

Kuala Pembuang Regional General Hospital is a type C Hospital located in Seruyan Hilir District, Seruyan Regency, Central Kalimantan Province, which has implemented SIMRS ± 2 years since 2019 and has been integrated through the LAN (Local Area Network) network in almost all service units in the hospital. Based on preliminary studies conducted with several officers in the unit who have used SIMRS. There are still several problems found during implementation, including features that have not run optimally, interference with the network or server down that results in SIMRS not being accessible, reports that are not appropriate because there are often double inputs or some are left behind and if there are input errors or errors in SIMRS have not been handled promptly. Some of these things have an impact on making users feel dissatisfied with their experience when using SIMRS. On the other hand, one of the indicators of the success of information system development is user happiness.[6]

The user's reaction to the information system, or the user's feelings after utilizing the system, is referred to as user satisfaction.[7] When adopting an information system, the level of user satisfaction achieved can be influenced by many factors, including the quality of the system itself, the quality of information, and the quality of the services offered.[8] According to the information system success model proposed by De Lone and McLean, the level of user satisfaction will also be higher if the quality of the information provided by an information system is better.[9] This line of thought is supported by the results of studies carried out by Rai et al. (2002),[10] McGill et al. (2003),[11] and Livari (2005),[12] all of which are cited in Livari (2005). Based on the findings of this study, the end user of an information system will feel satisfaction when using the information system if the end-user believes that the quality of information generated from the information system is of a high standard. This belief is based on the findings of a study stating that end-user perceptions of the quality of information resulting from information systems are of a high standard.

At Kuala Pembuang Hospital, there has been no research on the relationship between system quality, information quality, and SIMRS service quality with the level of user satisfaction. In addition, research conducted by Seddon and Kiew (1996),[13] Rai et al. (2002),[10] McGill et al. (2003),[11] Iivari (2005),[12] and Dony and Mochammad (2021)[14] showed that the quality of the information system and the quality of the information itself affected the level of user satisfaction with the information system. and Researchers Myers et al. (1997),[15] Yang et al. (2004),[16] and Istianingsih and Utami (2009)[17] all agreed that the level of service quality has an effect on the level of user satisfaction with information systems. On the other hand, research that contradicts the findings of research conducted by Amalia and Pratomo[18] on the influence of information system quality, information quality, and perceived benefits on the satisfaction of users of accounting information systems (study on users of accounting information systems at PT. Cicendo Eye Hospital Bandung) was found. This research was conducted on users of accounting

information systems at PT. Cicendo Eye Hospital Bandung. Through his research, he concluded that the quality of the information system has a great effect on user happiness with the accounting information system, although the quality of the information itself does not have a significant effect on user satisfaction. The level of user satisfaction with the accounting information system is significantly influenced not only by the quality of the information system itself but also by the quality of the information accessed by the user.

The majority of employees of Kuala Pembuang Regional Hospital are between the ages of 20 and 35. According to research Ma'ruf[19], a person's age can affect his satisfaction with information systems because, with age, his experience increases, thereby increasing the satisfaction requirements for information systems. However, in a separate study, Mustikawati[20] did not find a relationship between the age of information system users and their level of happiness.

The emergence of these contradictory findings forced researchers to retest different samples. The emergence of these contradictory findings forces researchers to conduct retesting on different samples, so further research needs to be done on this issue. the purpose of this study was to determine the relationship between age, information quality, system quality and service quality with user satisfaction of SIMRS Hospital Management Information System at RSUD Kuala Pembuang.

METHOD

This research takes a quantitative approach to topic investigation. Observational research with a cross-sectional design is this type of research. The method used is an online survey method.

People who have a login information system username at Kuala Pembuang Regional Hospital are the population for this study; in total, there are 137 users in this population consist of 12 of supervision of twenty people and the establishment of a medical record system of 6 people, 14 people in the outpatient installation, 11 people in the emergency room, 40 people in the inpatient facility, 16 people in the pharmacy, 5 people in UTDRS, 8 people in radiology, 12 people in the laboratory, and 6 people in the central surgical installation.

In this study, the sampling technique used the type probability sampling, with disproportionate stratified random sampling technique. it is used to determine a sample from a stratified population but less than proportional. The proportion of the sample is determined by collecting data on the number of respondents from each section, then determine the number of random samples needed for each desired section. random sample needed for each desired section. The Lemeshow formula is used to determine the appropriate sample size for this investigation; the resulting sample consisted of 89 participants and included the following categories of people:

Table 1. Sample Proportions

No.	Room	Number of Officers	Number of Samples	Sample count
1.	Management	20	20/137 x 89	13
2.	Medical Record Installation	6	6/137 x 89	4
3.	Outpatient Installation	14	15/137 x 89	10
4.	Emergency Installation	11	11/137 x 89	7
5.	Inpatient Installation	41	41/137 x 89	27
6.	Pharmaceutical Installations	15	16/137 x 89	8
7.	UTDRS	5	5/137 x 89	3
8.	Radiology Installation	7	7/137 x 89	4
9.	Laboratory Installation	12	12/137 x 89	9
10.	Central Surgical Installation	6	6/137 x 89	4
	Total Population	137	Number of Samples	89

The criteria for the sample included in this study are working in a hospital for at least 1 year and having a SIMRS login username at Kuala Pembuang Hospital. Whereas criteria exclusion is: respondents did not fill out the questionnaire and respondents resigned.

The variable studied in this study is an independent variable (age, system quality (system quality), information quality (information quality), and service quality (service quality)) and the dependent variable is user satisfaction (user satisfaction).

The research instrument uses a questionnaire that is tested for validity first. The research validity test was carried out on 30 respondents in the same place as the research location, namely at Kuala Pembuang Regional Hospital.

Bivariate analysis used the chi-square test because in this study the data types were classified as categorical and were analyzed based on cross-tabulation of each bound and free variable. Using multiple logistic regression tests, multivariate data analysis was carried out at Kuala Pembuang Hospital to find out which variables are most related to the level of satisfaction experienced by users of the management information system. These variables include system quality, information quality, and service quality.

RESULT AND DISCUSSION

The relationship between age and SIMRS user satisfaction at Kuala Pembuang Hospital

The following results analysis of the relationship between age and simrs user satisfaction are presented in the distribution table 2 as follows:

Table 2. Analysis of the Relationship between Age and SIMRS User Satisfaction at Kuala Pembuang Regional General Hospital

Age	User Satisfaction				Total Respondents		P-value
	Low		High				
	n	%	n	%	n	%	
Young Adults (18 – 35 Years Old)	16	17.97	55	61.80	71	79.78	0.587
Middle Adult (36 – 55 Years Old)	3	3.37	15	16.85	18	20.22	
Sum	19	21.35	70	78.65	89	100	

Based on the table above, the results of the Pearson Chi-Square test with a confidence level of 95% obtained a p-value = 0.587, so that H0 was received (p more than 0.05), which means that there is no significant relationship between age and the satisfaction of SIMRS users at Kuala Pembuang Hospital. This shows that age has nothing to do with the high level of SIMRS user satisfaction. Based on table 2, as many as 71 respondents were young adults, 16 people (17.97%) had low user satisfaction and 55 people (61.80%) had high user satisfaction. In contrast, of the 18 respondents who were of middle adult age, 3 people (3.37%) had low user satisfaction and 15 people (16.85%) had high user satisfaction. This difference in the number of users with high and low satisfaction that is not too significant shows that age does not determine user satisfaction in using SIMRS. Factors that led to why age did not have a significant relationship with SIMRS user satisfaction include: The uneven age distribution of respondents in the middle adult age group was less than that of the young adult age group, thus influencing the distribution of responses to user satisfaction levels.

According to Davis in Arifin et al[21], there is a relationship between job satisfaction and factors such as employee turnover, absenteeism, age, employment rate, and the size of the company's organization. Age is a variable studied in the study, and the author, Arifin, found that older workers tended to report higher levels of job satisfaction than relatively younger workers. The assumption is made that older workers have greater skills in successfully adjusting to their respective work environments. According to Robbins[22], older workers tend to be more satisfied with their work because they are already familiar with the organization they work for, which results in the formation of strong psychological ties with the company as well as co-workers. worker. In addition, older employees are more loyal to the business because they believe that starting a career elsewhere is not an easy thing. This perception contributes to the fact that older employees have more experience.

This research is in line with the findings of Mustikawati's research[20] which states that there is no significant relationship between a person's age and the level of enjoyment he experiences when using information systems. The level of satisfaction of users of the health information system with the implementation of the health information system is directly proportional to the level of fulfillment of tasks or job requirements by the health information system. It is not the age of the user that determines whether or not they will be satisfied with the health information system; rather whether the system is in line with the task that the user is trying to complete. Therefore, the age difference between users of the health information system does not affect the level of satisfaction experienced by these users. This study is consistent with the findings of Zein et al[23] also.

The relationship between system quality and SIMRS user satisfaction at Kuala Pembuang Hospital

The following results Analysis of the relationship between system quality and SIMRS user satisfaction are presented in the distribution table 3 as follows:

Table 3. Analysis of The Relationship between System Quality and SIMRS User Satisfaction at Kuala Pembuang Regional General Hospital

System Quality	User Satisfaction				Total Respondents		P-value
	Low		High				
	n	%	n	%	n	%	
Bad	13	14.61	13	14.61	26	29.21	
Good	6	6.74	57	64.04	63	70.79	0.000*
Sum	19	21.35	70	78.65	89	100	

Based on the table above, the Pearson chi-square test results with a confidence level of 95% obtained a p-value = 0.000, so that H0 was rejected (p less than 0.05), which means that there is a significant relationship between the quality of the system and the satisfaction of SIMRS users at Kuala Pembuang Hospital. It can be seen in table 3 that the respondents who stated that the quality of the system was not good were 26 people. Of the 26 people who expressed low user satisfaction as many as 13 (14.61%) and those who expressed high user satisfaction as many as 13 (14.61%). Of the respondents who stated that the quality of the system was good as many as 63 people. Of the 63 people, 6 (21.35%) expressed low user satisfaction, and 57 (64.04%) expressed high user satisfaction. This shows that if respondents state that the quality of the system is good, most are satisfied with the quality of the hospital information system.

Based on respondents' answers regarding the quality of the system, most respondents agreed. On the other hand, the question regarding the item that the hospital information system is stable and so far there is no damage has not much answer. Of the 89 respondents, 2 people (2.2%) expressed strong agreement, 35 people (39.3%) agreed, 44 people (49.4%) disagreed, and 8 people (9%) strongly disagreed. To keep the level of service provided by the hospital at a high standard, it is important to keep the system functioning properly so that damage and errors can be avoided. An unstable information system will become an obstacle for hospitals it can cause considerable losses. If left unchecked, it is not only a loss on the scale of results and of course, a decrease in user confidence in the quality of the information system can occur. Hospital management needs to pay more attention to the maintenance of information systems to solve this problem. The purpose of this maintenance is to ensure that the system used by the user is reliable and free from errors and problems.

The quality of a system is a property that is determined by the information inherent in the system itself. When referring to information systems, "system quality" refers to a combination of "hardware quality" and "software quality". System performance is the quality of the system and relates to how well the hardware capabilities, software, policies, and procedures of the information system can provide the information the user needs.[9]

According to Supriatna and Jin,[24] the toughness or ability of applications used in information systems to be able to operate without experiencing errors (errors) which are meaningful in the long term and can be relied on in the process of retrieving, processing, and presenting information and data with a good level of truth/trust is what is meant by the term "stability/reliability of information systems". In other words, it refers to the ability of the information system to be stable and reliable. In addition, the system can display the necessary facts and information promptly and do it in a way that is always up to date.

This study agrees with the findings of Meidiawani et al (2021), which found that there is a strong relationship between system quality and the level of satisfaction experienced by end users (p-value = 0.004) This study agrees with the findings of Riski et al. (2021), which found that there is a correlation between system quality and user satisfaction levels, with p values = 0.002 indicating this relationship.

The relationship between information quality and SIMRS user satisfaction at Kuala Pembuang Hospital

The following results Analysis of the relationship between information quality and SIMRS user satisfaction are presented in the distribution table 4 as follows:

Table 4. Analysis of The Relationship Between Information Quality and SIMRS User Satisfaction at Kuala Pembuang Regional General Hospital

Quality of Information	User Satisfaction				Total Respondents		P-value
	Low		Tall				
	n	%	n	%	n	%	
Bad	14	15.73	15	16.85	29	32.58	
Good	5	5.62	55	61.80	60	67.42	0.000*
Sum	19	21.35	70	78.65	89	100	

Based on the table above, the Pearson chi-square test results with a confidence level of 95% obtained a p-value = 0.000, so that H0 was rejected (p less than 0.05), which means that there is a significant relationship between the quality of information and the satisfaction of SIMRS users at Kuala Pembuang Hospital. It can be seen in the table above that 29 respondents stated that the quality of information was not good. Of the 29 people who expressed low user satisfaction, 14 (15.73%) and those who expressed high user satisfaction 15 (16.85%). Respondents who stated that the quality of information was good as many as 60 people. Of the 60 people, 5 (5.62%) expressed low user satisfaction, and 55 (61.80%) expressed high user satisfaction. This shows that if respondents state that the quality of service is good, most are satisfied with the quality of information on hospital management information systems.

Based on the responses given by respondents regarding the accuracy of the material, most respondents agreed. On the other hand, questions regarding hospital information system items that provide error-free information get the most responses. Of the 89 respondents, 5 people (5.6 percent) strongly agreed, 45 people (50.6 percent) agreed, 33 people (37.1 percent) disagreed, and 6 people (6.7 percent) strongly disagreed. Maintaining the quality of the information in such a way that it is free from errors and does not direct users who receive and utilize information in a misleading direction is very important so that the information can be utilized as a source of decision-making, and operational control, and troubleshooting. For this reason, there must be ongoing monitoring and review carried out by management to maintain the accuracy of the information and ensure that the information is error-free.

An accurate information system is a system in which the information produced is true, precise, and clear, as stated by Hadiyanto et al.[25] Users will benefit from this. The information presented is accurate and free from inaccuracies to avoid misleading users and causing them to make bad choices. Information is considered accurate if it does not contain inaccuracies, both in the information itself and in the data it generates.

According to Kadir in Wicaksono et al[26], it is claimed that the truth of information reflects the extent to which information is true and determines the reliability or reliability of the information. Accurate information is information that does not contain inaccuracies and does not cause the person receiving the information to make incorrect conclusions.

This research is in line with that conducted by Hadiyanto et al,[25] which found that there is a substantial relationship between the quality of information and the level of user happiness, with a P value of 0.001 indicating this. This research is also in line with research conducted by Amarin,[27] which found that there is a strong relationship between information quality and user happiness with a P-Value of 0.000. These findings support the findings of this study.

The relationship between service quality and SIMRS user satisfaction at Kuala Pembuang Hospital.

The following results Analysis of the relationship between service quality and SIMRS user satisfaction are presented in the distribution table 5 as follows:

Table 5. Analysis of The Relationship between Service Quality and SIMRS User Satisfaction at Kuala Pembuang Regional General Hospital.

Quality of Service	User Satisfaction				Total Respondents		P-value
	Low		Tall				
	n	%	n	%	n	%	
Bad	13	14.61	16	17.98	29	32.58	
Good	6	6.74	54	60.67	60	67.42	0.000*
Sum	19	21.35	70	78.65	89	100	

Based on the table above, the results of the Pearson Chi-Square test with a confidence level of 95% obtained a p-value = 0.000, so that H0 was rejected (p more than 0.05), which means that there is a significant relationship between service quality and SIMRS user satisfaction at Kuala Pembuang Hospital. It can be seen in Table 5 that 29 respondents stated that the quality of service was not good. Of the 29 people who expressed low user satisfaction as many as 13 (14.61%) and those who expressed high user satisfaction were 16 (17.98%). Respondents who stated that the quality of service was good were as many as 60 people. Of the 60 people, 6 (6.74%) expressed low user satisfaction, and 54 (60.67%) expressed high user satisfaction. This shows that if respondents state that the quality of service is good, most are satisfied with the quality of services of the hospital management information system.

Based on respondents' answers regarding the quality of service most respondents agreed. However, the question on the item when getting into trouble, the hospital information system provider solves the problem the user quickly has the least number of responses. Of the 89 respondents, 7 people (7.9 percent) said they strongly agreed, 50 people (56.2 percent) agreed, 27 people (30.3 percent) disagreed, and 5 people (5.6 percent) strongly disagreed. The ability of SIMRS organizers to provide solutions to problems arising from errors is something that needs to be considered by the hospital administration. Because the implementation of a hospital management information system that is not supported by the ability of the system provider to deal with problems will undoubtedly slow down the process of services provided to patients,

According to Putra,[28] the term "quality of service" describes the degree of support that the client receives from the information systems department of an enterprise (in this case the developer of the hospital information system). The responses and observations that users make after interacting with the information system are what is intended to be considered the user's satisfaction with the information system.

The findings of this study are in line with research conducted by Amarin,[27] which found that there is a significant relationship between the quality of information and the level of user satisfaction, with a P-Value of 0.002. The study found that there is a strong association between the quality of information and the level of user satisfaction. This research is in line with that conducted by Sulistyorini et al,[29] which found that there is a significant relationship between the quality of information and the level of user happiness, with a P value of 0.002 which indicates this. These findings are supported by the findings of this study. This research is also in line with the findings of a study conducted by Putra[28] which found that the level of satisfaction of SIMRS users with the system is influenced by the quality of service they receive from the system.

Relationship between age, system quality, information quality, and service quality with SIMRS user satisfaction at Kuala Pembuang Hospital.

Multivariate analysis is carried out on two independent variables that meet the requirements of the multivariate model, namely the quality of information and the quality of service. After experiencing testing together, it turned out that only the quality of information had a significant partial relationship with the satisfaction of SIMRS users at Kuala Pembuang Hospital. The following results Multivariate modeling results without system quality and service quality variables Service are presented in the distribution table 6 as follows:

Table. 6. Multivariate Modeling Results without System Quality and Service Quality Variables Service

Variable	B	Wald	Sig.	Exp(B)	95%CI	
					Lower	Upper
Quality of information	2.329	15.224	.000*	10.267	3.187	33.075

* = statistically meaningful (less than 0.05)

Based on the results of the multivariate variable information quality is the most dominant (strongest) variable related to SIMRS user satisfaction at Kuala Pembuang Hospital with an exponential value of B of 10.267, which means that good information quality will result in high user satisfaction 10.267 times better than the quality of information that is not good.

Therefore, the integration of modules into the information system becomes very important, since the number of modules that have been integrated affects the output of the

resulting report. When it comes to the decision-making process, which includes strategic and clinical decisions, management and affiliate units will benefit from high-quality data. The management, information technology, and medical records departments also made a significant contribution to the study.

Because the quality of information is the most influential variable, it has the greatest impact on the level of satisfaction reported by SIMRS users. Information quality refers to the output in the form of information produced by the information system used (Rai et al., 2002). Therefore, the integration of modules into the information system becomes very important, since the number of modules that have been integrated affects the output of the resulting report. When it comes to the decision-making process, which includes strategic and clinical decisions, management and affiliate units will benefit from high-quality data. The management, information technology, and medical records departments also made a significant contribution to the study.

Users of information systems will experience a higher level of overall satisfaction as a direct proportion of the quality of information generated by the system.[9] The findings of Seddon and Kiew (2011),[13] Rai et al. (2002),[10] and McGill, Hobs, and Klobas (2003),[11] all of which state that the quality of information has a positive effect on the satisfaction of users of information systems, giving confidence in this opinion. All these researchers found that the quality of information has a positive effect on user satisfaction. The statement that the quality of information has a positive and significant effect on the level of satisfaction experienced by end users is supported empirically by the results of research conducted by Istiningsih and Utami.[30] From this, it follows that the end user will be satisfied with the information provided by the system if it is of high quality, accurate, and available whenever needed.

CONCLUSION

The results obtained in this study are there is no significant relationship between age and SIMRS user satisfaction at Kuala Pembuang Hospital. There is a significant relationship between system quality with SIMRS user satisfaction, information quality, service quality with SIMRS user satisfaction at Kuala Pembuang Hospital. The most dominant variable associated with SIMRS user satisfaction at Kuala Pembuang Hospital is information quality.

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