

THE EFFECT OF EFFICIENCY AND QUALITY OF ELECTRONIC MEDICAL RECORD SERVICES ON EMPLOYEE SATISFACTION AT HOSPITAL X

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ABSTRACT

Electronic medical records (EMR) are the use of information technology equipment to collect, store, process, and access data stored in patient medical records at a hospital in a database management system that combines various medical data sources. The purpose of this study was to determine the relationship between the efficiency and quality of electronic medical records services and the job satisfaction of service quality officers at Hospital X, Kediri City. This study uses a quantitative method with a correlational approach. The population of this study was 110 people calculated using Krejcie and Morgan and resulted in 86 people. The X variables of this study are EMR Efficiency and Service Quality while the Y variable in this study is Employee satisfaction. The instrument used was a questionnaire, and the data were analyzed using multiple linear regression tests. The research variables are EMR Efficiency, Service Quality, Officer Performance. The results of this study obtained a regression equation formed is $Y = 7.052 + 0.071X_1 + 0.606X_2$. In addition, the coefficient of determination test value of 68.6% of officer job satisfaction is influenced by the variables of RME efficiency and service quality. While the remaining 31.4% is influenced by other variables, which are not within the scope of the researcher's research. This study assesses the impact of EMR implementation not only on the service process, but directly on the Satisfaction of hospital staff as system users.

Keywords: Efficiency, Electronic Medical Records, Service Quality, Staff Performance

I. Introduction

Electronic medical records (RME) is the application of information technology in medical record management which changes manual systems into digital systems so that the process of recording, storing and managing data becomes more effective and efficient (Alfitasari et al., 2025) (Rahmi et al., 2025). A good medical record contains complete data that can be processed into information, allowing for objective evaluation of health service performance (Ministry of Health Regulation, 2022)

Research conducted by (Simbolon et al., 2023) showed that the use of electronic medical records was categorized as good in 29 people (72.5%), while the level of satisfaction of health workers was in the satisfied category with a percentage of 65.0%. (Tri Hendaryanti & Deharja, 2020) also conducted an analysis of user satisfaction of electronic medical records using the DeLone and McLean method in the Medical Records Unit of Dr. Cipto

Mangunkusumo National Hospital, and qualitatively found that respondents were satisfied because electronic medical records made their work easier, the information presented was high quality, and the functions provided were very helpful in their work. In addition, research (Ernest, 2020) stated that the use of Electronic Medical Records was proven to simplify nurses' tasks and increase efficiency. This is supported by the availability of adequate facilities and infrastructure, a sufficient number of human resources, and the implementation of effective hospital management policies.

User satisfaction with Electronic Medical Records (EMR) is a key indicator for evaluating the effectiveness of an information system. This level of satisfaction indicates that the information system meets user needs and aligns with their goals and expectations (Wahyudi & Wahab, 2024). The primary cause of dissatisfaction is incorrect and inadequate system use. Of 141 physicians, only 22 rated the current system as satisfactory and effective; a majority (40) rated the system as not worth the time and effort required to use it; and a majority (94) reported feeling dissatisfied and facing new challenges in healthcare worker performance (Pauziah & Purbayanti, 2023).

Studies show that users who are satisfied with the systems they use tend to have higher motivation and better performance (Utami, 2024). Users feel more supported and motivated by systems that optimally meet their needs, which can lead to increased work efficiency and effectiveness. Therefore, understanding and improving the level of satisfaction of EMR users is crucial for information system evaluation (Risa Setia Ismandani et al., 2023). A meta-analysis of 26 studies in the United States on nurses' experiences using electronic medical records found that electronic medical records increased satisfaction in terms of function, physical, perceptual, and cognitive aspects. However, electronic medical records also cause communication difficulties, preventing nurses from interacting effectively with doctors and other patients (Tolentino et al., 2020).

II. Methods

This study uses a quantitative method with a correlational design to analyze the effect of Electronic Medical Record (EMR) efficiency and EMR service quality on the job satisfaction of officers at RSUD X, Kediri City. The population in this study were all officers and nurses of the hospital who use EMR in their work, totaling 110 people. The determination of the number of samples used the Krejcie and Morgan table, resulting in a sample of 86 respondents. The sampling technique used was nonprobability sampling with an incidental sampling approach. The independent variables in this study consisted of EMR efficiency (X1) and EMR service quality (X2), while the dependent variable was officer job satisfaction (Y). Data were collected using a questionnaire and analyzed using multiple linear regression tests to determine the partial and simultaneous effects between research variables.

III. Results and Discussion

A. Variable Characteristics Analysis

Gender	Frequency	Percentage
Man	34	39.54%
Woman	52	60.46%
Age		
21-25	18	20.93%

26-30	42	48.83%
31-35	26	30.24%

Source: Primary Data, 2025

Based on the table above, it is known that the most common gender is female with 52 respondents (60.46%), and the most common age of respondents is 26-30 years old with 42 respondents (48.83%).

B. Classical Assumption Test

Table 3. Normality Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		86
Normal Parameters ^{a,b}	Mean	.0000000
	Standard Deviation	2.80897007
Most Extreme Differences	Absolute	.074
	Positive	.035
	Negative	-.074
Test Statistics		.074
Asymp. Sig. (2-tailed)		.200 ^{c,d}

a. Test distribution is Normal.

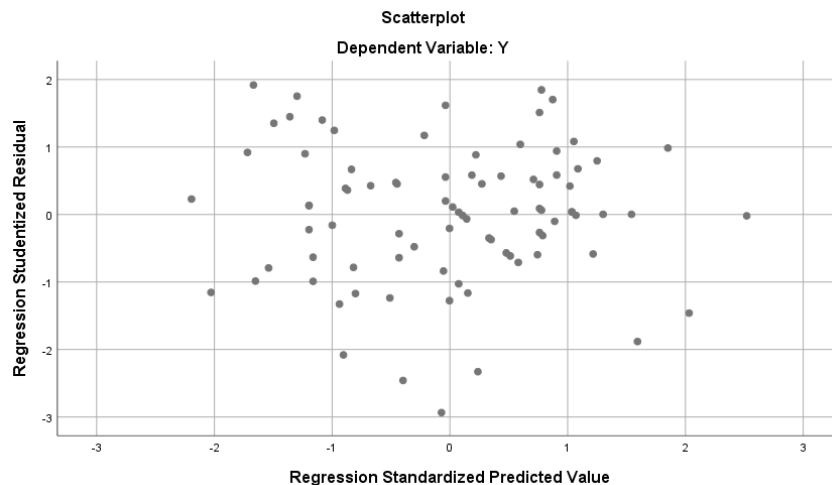
b. Calculated from data.

c. Lilliefors Significance Correction.

Source: Primary Data, 2025

Based on the results of the calculations that have been carried out, the results obtained for a significant value of 0.200 or greater than 0.05, meaning that this data has a normal distribution.

Table 4. Heteroscedasticity Test



Source: Primary Data, 2025

From the image above, the data points are spread throughout the section and do not form a pattern, this shows that there is no heteroscedasticity in the research data.

Table 5. Multicollinearity Test

Model		Unstandardized Coefficients		Coefficient Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7,052	2,482		2,842	.006		
	X1	.071	.095	.086	.743	.459	.285	3.509
	X2	.606	.093	.754	6,546	.000	.285	3.509

a. Dependent Variable: Y

Source: Primary Data, 2025

From the table above, it can be seen that the VIF value of the RME Efficiency (X1) and Service Quality (X2) variables is 3.509 (less than 10) and the tolerance value is 0.285 (greater than 0.1), so it can be concluded that there is no multicollinearity in the research data.

Table 6. Multiple Linear Regression Test

Model		Unstandardized Coefficients		Coefficient Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7,052	2,482		2,842	.006
	X1	.071	.095	.086	.743	.459
	X2	.606	.093	.754	6,546	.000

a. Dependent Variable: Y

Source: Primary Data, 2025

From the table above, the multiple linear regression equation can be formulated as $Y = 7,052 + 0,071X_1 + 0,606X_2$.

C. Hypothesis Testing

Table 7. X1 t-test

Model	Coefficient		Standardized Coefficients Beta	t	Sig.
	Unstandardized Coefficients B	Std. Error			
1 (Constant)	6,639	3,037		2.186	.032
TOTAL X1	.597	.062	.724	9.609	.000

a. Dependent Variable: TOTALLY

Source: Primary Data, 2025

From the table above, it is known that the t count of the RME Efficiency variable (X1) is 9.609. While the t table with a 5% confidence level is $t(\alpha / 2; 86-2-1) = t(0.05 / 2; 83) = t(0.025; 83) = 1.98896$ or 1.989. Efficiency has a significance value of 0.032 which means less than 0.05 and has a t count value of 2.186 which is greater than the t table of 1.989 ($2.186 > 1.989$), meaning that the independent variable partially has a significant influence on the dependent variable.

Table 8. X2 t-test

Model	Coefficient		Standardized Coefficients Beta	t	Sig.
	Unstandardized Coefficients B	Std. Error			
1 (Constant)	8,069	2,065		3.907	.000
TOTAL X2	.664	.049	.827	13.476	.000

a. Dependent Variable: TOTALLY

Source: Primary Data, 2025

The service quality variable (X2) has a significance value of 0.00 which means less than 0.05 and has a t-count value of 13.476 which is greater than the t-table of 1.989 ($13.476 > 1.989$), meaning that the independent variable partially has a significant influence on the dependent variable.

Table 9. F Test

Model	ANOVA				
	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1464,079	2	732,040	90,594	.000b
Residual	670,677	83	8,080		
Total	2134.756	85			

a. Dependent Variable: TOTALLY

b. Predictors: (Constant), TOTALX2, TOTALX1

Source: Primary Data, 2025

From the table above, it can be seen that the significance value is 0.000 (less than 0.05) and the calculated f is $90.594 > 3.11$, meaning that there is a significant influence between RME Efficiency (X1) and Service Quality (X2) on Officer Job Satisfaction (Y).

Table 10. Determination Coefficient Test

Model Summary

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.828a	.686	.678	2.84261

a. Predictors: (Constant), X2, X1

Source: Primary Data, 2025

The table above can draw the conclusion that the relationship (correlation) between the independent variables of EMR Efficiency and Service Quality with the dependent variable, namely Officer Job Satisfaction, is indicated by the magnitude of the Multiple R, namely 0.828. From the results of calculations using the SPSS version 25 program, it can be seen that the coefficient of determination in the study has two independent variables so that the R Square is used which is obtained at 0.686. This means that 68.6% of officer job satisfaction is influenced by the variables of EMR efficiency and service quality.

Discussion

A. Analysis of the Efficiency of Electronic Medical Records on Officer Job Satisfaction

Efficiency in the context of hospital management is closely related to the optimal use of resources to achieve maximum results. According to operational management principles, an efficient system is one that reduces waiting times, minimizes errors, and accelerates work processes. The implementation of Electronic Medical Records (EMR) is one form of technological innovation in healthcare services that aims to improve work efficiency. According to the Technology Acceptance Model, the efficiency of a digital system is strongly influenced by the perceived ease of use and perceived benefits of the user, in this case, the medical records staff (Sulistyo & Mulyanti, 2023).

Theoretically, increased efficiency through the use of EMR should have a positive impact on staff job satisfaction. This is because EMR systems enable faster access to patient data, more accurate recording, and a reduction in time-consuming manual administrative burdens. Job satisfaction, according to Herzberg's theory, is influenced by motivating factors such as achievement, recognition, and supportive working conditions. When EMRs streamline work and reduce administrative pressure, they can create a more comfortable and organized work environment, thereby increasing staff job satisfaction.

The adoption of EMRs in Indonesia, which is regulated by various regulations, such as the Minister of Health Regulation, demonstrates the government's commitment to modernizing the healthcare system. However, the success of EMR implementation is not only measured by its adoption alone, but also by its level of efficiency. EMR efficiency encompasses various dimensions, from reduced administrative time, increased data accuracy and completeness, optimized clinical workflows, to potential reductions in operational costs. This increased efficiency is expected to have a direct impact on improving the quality of patient care, reducing queues, accelerating diagnosis and treatment, and enabling healthcare workers to focus on more crucial clinical aspects.

Therefore, research on the efficiency of EMR is highly relevant and urgent. A thorough understanding of how EMR can effectively increase productivity, reduce errors, and optimize resources in healthcare facilities will significantly contribute to policy development, improved EMR implementation, and ultimately, improving the overall quality of health for the Indonesian public.

Previous research found that the t-value of the EMR Efficiency variable (X1) was 2.186. Meanwhile, the t-table with a 5% confidence level is $t(\alpha/2; 86-2-1) = t(0.05/2; 83) = t(0.025; 83) = 1.98896$ or 1.989. Efficiency has a significance value of 0.032, which is less than 0.05, and has a calculated t-value of 2.186, which is greater than the t-table of 1.989 ($2.186 > 1.989$), meaning the independent variable partially has a significant effect on the dependent variable. This indicates that Electronic Medical Record (EMR) efficiency impacts the quality of staff work. In addition to improving the quality of patient care and macro-level operational efficiency, the implementation of efficient EMR also has a significant impact on staff job satisfaction levels in healthcare facilities.

EMR efficiency directly reduces administrative workloads that previously required time and

effort. With EMR, staff no longer spend significant time searching for physical medical records, manually filling out forms, or correcting repetitive handwriting errors. Fast and accurate access to information allows staff to focus on their core tasks directly related to patient care, such as history taking, diagnosis, and medical procedures.

Thus, the efficiency of EMR has significant potential to increase job satisfaction, but this is highly dependent on the quality of implementation and support systems. Hospital management needs to address the needs of end users, such as medical records staff, through training, technical support, and ongoing system improvements. Regular evaluation of staff job satisfaction after EMR implementation is crucial to ensure the system is truly having a positive overall impact.

B. Analysis of the Quality of Electronic Medical Record Services on Officer Job Satisfaction

Service quality is the extent to which a service meets the needs and expectations of its users. In the context of health information systems such as Electronic Medical Records (EMR), service quality encompasses not only data access speed, system reliability, and information security, but also ease of use and technical support provided to staff. According to SERVQUAL (Service Quality) theory, service quality can be measured across five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. When these five aspects are implemented in an EMR system, it can create a better work experience for staff (SONDAKH et al., 2023).

Employee job satisfaction is strongly influenced by how the EMR system supports the smooth and comfortable performance of daily tasks. If the EMR system provides responsive service with minimal technical issues, staff will feel more supported, appreciated, and motivated. Herzberg's two-factor theory states that one factor that increases job satisfaction is good working conditions, including effective and convenient work system support. In other words, if the service quality of an EMR system is high, the potential for increased job satisfaction is also high.

However, in practice, the quality of EMR services often remains a challenge. Some staff complained about the system being slow, experiencing frequent errors, or lacking features to support their administrative needs. This frustrated them and made them feel burdened, even lowering their morale. Therefore, although EMR is designed to simplify healthcare services, the system's service quality must be continuously improved to ensure its benefits are truly felt by staff, the primary users.

The research conducted showed that the service quality variable (X2) had a significance value of 0.00, which is less than 0.05, and a calculated t-value of 3.907, which is greater than the t-table of 1.989 ($3.907 > 1.989$). This means that the independent variable partially has a significant effect on the dependent variable. This indicates that the quality of electronic medical record services influences staff job satisfaction.

It can be concluded that the quality of EMR services significantly influences staff job satisfaction. Therefore, hospital management needs to ensure that the EMR system is not only technologically advanced but also responsive to user needs. Regular evaluation, consistent training, and two-way communication between staff and system developers are key to creating a high-quality EMR system and positively impacting staff job satisfaction.

Furthermore, high-quality EMR also minimizes the potential for medical errors due to inaccurate or incomplete information, which directly increases staff's sense of security and confidence in carrying out their duties. Staff feel more comfortable and confident in providing care when they know the data they are using is reliable. An intuitive interface and logical workflow within an EMR also reduce frustration and fatigue that can arise from a complex or slow system. The system's ability to integrate with other devices or hospital information systems also contributes to a more cohesive work experience. Thus, high-quality EMR not only improves operational efficiency but also creates a more productive work environment, reduces stress, and ultimately improves overall job satisfaction among healthcare workers, as they can provide optimal care with the support of reliable technology.

C. Analysis of the Relationship Between Efficiency and Quality of RME Services and Officer Job Satisfaction

In human resource management theory, work efficiency and service quality are two important, interrelated factors that directly impact employee job satisfaction. Efficiency relates to the ability to complete tasks with minimal time, effort, and resources without compromising results.

Meanwhile, service quality relates to the extent to which a system supports work tasks accurately, quickly, and satisfactorily. Herzberg's theory explains that motivating factors such as achievement, recognition, and good working conditions—including an efficient and high-quality work system—can significantly increase job satisfaction (Abdulhamidova. F., 2021).

Based on observations at various healthcare facilities that have implemented EMR, it was found that staff tend to be more satisfied when the EMR system is quick and easy to use (efficient), and when they receive good service support such as training, technical assistance, and a stable system (service quality).

EMR efficiency and service quality are not mutually exclusive; they support each other in creating a conducive work environment. If an EMR system is efficient but not accompanied by good service, staff may remain frustrated when technical issues are slowly resolved. Conversely, good service without system efficiency will also result in wasted work time and increase workload. Therefore, the relationship between the two is synergistic—if both work well, staff job satisfaction tends to increase significantly.

Meanwhile, the quality of service resulting from EMR is manifested in increased accuracy and completeness of patient data, reduced medical errors due to misinformation or human error, and improved continuity of care. With EMR, patient information can be well-integrated across units and facilities, supporting better care coordination and ultimately improving patient safety and experience. High-quality data from EMR is also essential for research, health policy planning, and program evaluation.

While the potential of EMR is enormous, its successful implementation depends heavily on how the system can optimally improve two crucial aspects: efficiency and quality of service. Understanding the interrelationship and impact of EMR on operational efficiency and quality of service is fundamental to identifying key success factors, overcoming obstacles, and formulating more effective implementation strategies. Therefore, in-depth research on the contribution of EMR to improving efficiency and quality of service in Indonesian healthcare facilities is highly relevant and urgent to support the realization of a more modern, responsive, and patient-centered healthcare system.

The research conducted found a significance value of 0.000 (less than 0.05) and an f-value of $90.594 > 3.11$, indicating a significant effect between EMR Efficiency (X1) and Service Quality (X2) on Officer Job Satisfaction (Y). This indicates that EMR Efficiency and Service Quality jointly influence officer job satisfaction.

The implementation of Electronic Medical Records (EMR), which is not only efficient but also offers high-quality service, has been shown to have a significant and positive impact on officer job satisfaction in healthcare facilities. EMR efficiency, which includes speed of data access, reduced administrative time, and optimized workflow, directly reduces the physical and mental workload of officers. Officers no longer face the frustration of lengthy file searches or repetitive form completion, allowing them to allocate more time and energy to direct patient interactions and essential clinical tasks. This reduction in administrative overhead directly increases a sense of productivity and accomplishment in their work.

IV. Conclusion

Based on the research results, it can be concluded that the efficiency of Electronic Medical Records (EMR) has a significant effect on the job satisfaction of officers at RSUD X, Kediri City. In addition, the quality of Electronic Medical Records services has also been shown to have a significant effect on the job satisfaction of officers. Simultaneously, the efficiency of EMR and the quality of EMR

services together have a significant effect on the job satisfaction of officers at RSUD X, Kediri City. Thus, the better the efficiency of the EMR system and the higher the quality of services produced, the higher the job satisfaction of officers in carrying out their duties at the hospital.

V. References

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