

The Influence of the Information System Success Model and the Technology Acceptance Model on the Behavioral Intention of Specialist Doctors to use Electronic Medical Records For Inpatient Care Unit

Julita D. L. Nainggolan¹, Duta Liana², Hosizah³

^{1,2,3}Universitas Esa Unggul, Jakarta, Indonesia

Email: julita.nainggolan@esaunggul.ac.id

Abstract

The acceleration of technological developments affects the management of information systems within the hospital, especially in using of Electronic Medical Records (EMR). Behavioral intention to use EMR is the essential factor, the role of user is one of the keys to successful EMR implementation. This study aims to analyze the factors that influence behavioral intention of specialist doctors to use inpatient EMR. Data were obtained through questionnaires using the Likert measuring scale and data analysis was processed using SEM (Structural Equation Modelling). Quantitative analytical research method with cross-sectional design using a total sampling of 144 specialists. Of the total 144 respondents, the majority of respondents were male (59%), aged 40-50 years (30.6%) and had a working period of more than 20 years (25.7%). Hypothesis analysis found that there was an effect of system and information quality on perceived ease of use and usefulness. System quality, perceived ease of use and usefulness influence behavioral intention, while information quality has no effect, but indirectly influences behavioral intention through perceived ease of use and usefulness. Service quality has no effect on perceived ease of use, perceived usefulness, and behavioral intention. Perceived usefulness has the greatest influence on behavioral intentions to use inpatient EMR. As an implication of this study, it was found that it is necessary to optimize the inpatient EMR system in the aspects of reliability and connectivity.

Keywords: TAM, ISSM, System Quality, Information Quality, Service Quality, Perception of User-Friendliness, Perception of Usefulness, Behavioral Intentions.

----- ◆ -----

A. INTRODUCTION

The use of Hospital Information Systems (SIRS) within organizations is highly necessary given the ever-increasing technological advancements of today's world. With the use of this information system technology, patients can easily access information and receive fast healthcare services. Thus, it's no surprise that when choosing a hospital, patients are drawn to those who can provide high-quality healthcare services through advanced information system technology. Hospital X is a Class B hospital in the Tangerang Regency area that has been using the SIRS application since its inception in 1997 and continues to develop its information system services.

According to the Regulation of the Minister of Health of the Republic of Indonesia (Permenkes RI) No. 82 of 2013 on "Hospital Management Information Systems", every hospital must establish the Hospital Management Information System. (Regulation of the Minister of Health of the Republic of Indonesia No. 82 of 2013, n.d.).

Patient medical records are shifting towards an electronic base with the issuance of the Minister of Health Regulation (PMK) number 24 of 2022 concerning Medical Records. Through this policy, public healthcare facilities (Fasyankes) are required to conduct electronic medical record patient history recording systems. The transition process will take place until no later than December 31, 2023.

The electronic medical record (EMR) for inpatient care has been initiated since March 2020 for nurses and July 2022 for resident doctors and specialists. Initial data from surveys conducted by the hospital in October 2022 found that the acceptance and implementation of electronic medical records (EMR) in outpatient units, both by doctors and nurses, have already reached 100%, while for inpatient unit, only 15% of specialist doctors have implemented the system, and have not seen significant improvement during the routine monthly evaluation. This is in contrast to the implementation by resident doctors and nurses, which reached 100%.

Based on initial surveys from interviews with 5 specialist doctors at the hospital, assessing the quality of the system based on 3 variables taken from the ISSM theory, it was found that 100% stated that the quality of the system relating to the reliability of EMR and connectivity needs to be improved. Maryati's research in 2021 mentioned that respondents' characteristics in terms of age, gender, and education did not have a relationship with the use of EMR, while in terms of profession, it was found that there is a relationship with the use of EMR (Maryati, 2021). This is also a factor that needs to be further studied, where profession has a significant relationship with the use of EMR but why the compliance rate of specialist doctors with the use of EMR is still low.

There are several approaches to understanding the intention and behavior of system information usage by users. These models include the Technology Acceptance Model (TAM) developed by (Davis, 1989), the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by (Venkatesh et al., 2003), and ISSM (Information System Success Model) (DeLone & McLean, 1992). TAM has been used by many researchers to understand the intention and behavior of information technology usage by users in the context of learning UTAUT and ISSM. (Livinus et al., 2021) (Venkatesh & Davis, 2000). The UTAUT model uses four (4) core parameters to directly determine the intention of healthcare information technology behavior and user usage behavior, including performance expectations, effort expectations, social influence, and facilitating conditions.

Based on the above background, the researchers are interested in conducting research on "The Influence of Information System Success Model and Technology Acceptance Model on Behavioral Intention of Specialist Doctors to Use Electronic Medical Record for Inpatient Care Unit".

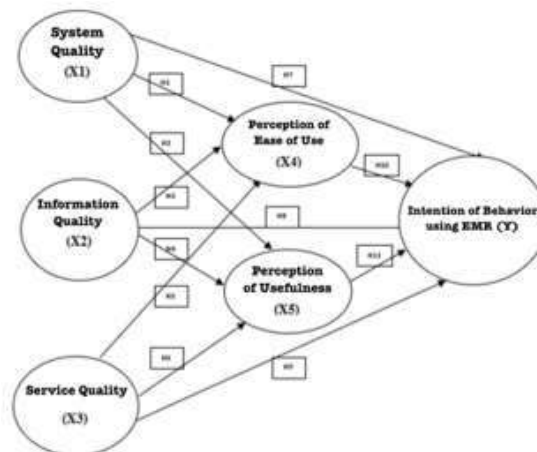
B. METHODS

This study has been conducted using a quantitative analytical method with cross-sectionally designed. The researcher will take a sample from the research population and collect data through the distribution of questionnaires. Data analysis will utilize the SmartPLS program and respondent characteristics will be analysed using univariate descriptive analysis through SPSS 25 in the form of numerical frequency and percentage; and quantitative descriptive approach by Three Box Method. Hypothesis testing will be carried out using SEM (Structural Equation Modelling) with SMART-PLS software. The sampling technique in this study involves the entire population (total sampling), where the sample taken is all specialist doctors who visit the ward.

The ISSM model is the most widely used model for measuring SI success (Rabaa, 2009). Therefore, the ISSM DeLone and McLean model is used to measure the success of an information system. Through this model approach, the researcher wishes to assess the role of the success of an information system in influencing user perceptions of the ease and usefulness of the behavioural intention towards the use of inpatient EMR. (Seddon & Kiew, 1996) found and supported the use of "usefulness" as a measure of SI success. In their assessment, the adopted concept of usefulness is equivalent to the notion of perceived usefulness in TAM by (Davis, 1989).

(Petter et al., 2008) observed that SI acceptance has been focused on voluntary use situations, where users have the evaluation to make a decision to either accept or reject the system (Petter et al., 2008). In a mandatory use setting, users usually do not have the option to accept or reject the system because it is mandatory for every user. Therefore, actual usage behavior can be a good measure of user perceptions of the system (Adeyemi & Issa, 2020).

The constellation for this research is as follows:



Picture 1. Research Constellation

The research hypotheses are formulated as follows:

- H₁: There is a significant effect of System Quality on the Perceived Ease of Use of Inpatient EMR.
- H₂: There is a significant effect of System Quality on the Perceived Usefulness of Inpatient EMR.

- H₃: There is a significant effect of Information Quality on the Perceived Ease of Use of Inpatient EMR.
- H₄: There is a significant effect of Information Quality on the Perceived Usefulness of Inpatient EMR.
- H₅: There is a significant effect of Service Quality on the Perceived Ease of Use of Inpatient EMR.
- H₆: There is a significant effect of Service Quality on the Perceived Usefulness of Inpatient EMR.
- H₇: There is a significant effect of System Quality on the Behavioral Intention to Use Inpatient EMR.
- H₈: There is a significant effect of Information Quality on the Behavioral Intention to Use Inpatient EMR.
- H₉: There is a significant effect of Service Quality on the Behavioral Intention to Use Inpatient EMR.
- H₁₀: There is a significant effect of Perceived Ease of Use on the Behavioral Intention to Use Inpatient EMR.
- H₁₁: There is a significant effect of Perceived Usefulness on the Behavioral Intention to Use Inpatient EMR.

C. RESULTS AND DISCUSSIONS

Based on the validity test results, it is known that the loading factor value for each item of the research variables has a loading factor value 0.5-0.60, indicating that all indicator items are valid indicators. (Ghozali, 2008) Furthermore, the validity can also be evaluated using Average Variance Extracted (AVE), where each construct has an AVE value > 0.50 (valid). Each indicator is also declared reliable by meeting the criteria of Cronbach's Alpha for each variable > 0.70 and Composite reliability for each > 0.70.

Table 2. Characteristic Description of the Respondent

No.	Characteristic		n	%
1	Gender	Male	85	59
		Female	59	41
		Amount	144	100
2	Age (in years)	40-50	44	30.6
		50-60	33	22.9
		50-60	33	22.9
		>60	28	19.4
		Total	144	100
3	Last Education Attainment	Specialist	85	59
		Subspecialist	37	25.7
		Doctor	19	13.2
		Professor	3	2.1
		Total	144	100
4	Duration of Employment (in years)	<5	22	15.3
		5-10	35	24.3
		10-15	27	18.7

		15-20	23	16
		>20	37	25.7
		Total	144	100

Based on Table 2, a majority of the respondents were male, amounting to 85 individuals (59%). The age group of 40-50 years constituted 44 individuals (30.6%), while those with a work experience of more than 20 years amounted to 37 respondents (25.7%). Moreover, 85 respondents (59%) are specialist doctors.

Descriptive Analysis (Threebox method)

Table 3. Matrix Threebox method

No	Variable	Respondent's response position.			Behavior
		Low	Medium	High	
1	System Quality			√	High quality
2	Information Quality			√	Informa-tive
3	Service Quality		√		Passive
4	Perception of Ease			√	Easy
5	Perception of Usefulness			√	Bene-ficial
6	Behavioral Intention			√	Con-sistent

Based on the table 3, it can be observed that out of the six variables, with each having its own indicators, five fall under the high category index, with only Service Quality (SQ) falling under the moderate index category. The quality of system and information is deemed to have a high level of performance and informativeness for users. On the other hand, the service quality is still considered inadequate. Users also perceive that using inpatient EMR does not trouble them and is useful in improving their performance

Evaluation of Model Adequacy and Fit (Goodness of Fit Model)

Table 4. Evaluation of Goodness

	Saturated Model	Estimated Model	Fit Criteria
SRMR	0.058	0.071	≤ 0.08 (Hair, 2021)
NFI	0.787	0.783	0-1 (Bentler, 1990) > 0.9 (Hair, 2021)

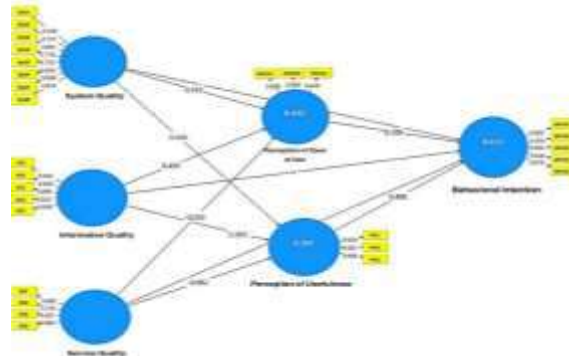
Table 5. Compatibility of Model (Goodness of Fit Model)

Variable	AVE	R Square
System Quality	0.505	
Information Quality	0.738	
Service Quality	0.744	
Perception of Ease	0.846	0.481
Perception of Usefulness	0.771	0.374
Behavioral Intention	0.834	0.640

$$\begin{aligned}
 \text{GoF} &= \sqrt{\text{Average AVE} \times \text{average R Square}} \\
 &= (4,438/6) \times (1.515/3) \\
 &= 0.740 \times 0.505 \\
 &= 0.374 \\
 &= 0.611
 \end{aligned}$$

This result refers to a significant value of GoF, indicating that the overall structural model is valid.

Hypothesis Testing Results Using Path Analysis



Picture 2. SM-PLS Outer Model Diagram

Table 6. Hypothesis Testing for Direct Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Description Ho: $\beta_2 = 0$ Ha: $\beta_2 \neq 0$
System Quality $\rightarrow$ Perception of Ease of Use	0,353	0,354	0,098	3,591	0,000	Ho: rejected Ha: accepted
System Quality $\rightarrow$ Perception of Usefulness	0,320	0,323	0,087	3,663	0,000	Ho: rejected Ha: accepted
Information Quality $\rightarrow$ Perception of Ease of Use	0,433	0,433	0,101	4,308	0,000	Ho: rejected Ha: accepted
Information Quality $\rightarrow$ Perception of Usefulness	0,392	0,393	0,091	4,294	0,000	Ho: rejected Ha: accepted
Service Quality $\rightarrow$ Perception of Ease of Use	-0,033	-0,034	0,086	0,389	0,697	Ho: accepted Ha: rejected
Service Quality $\rightarrow$ Perception of Usefulness	-0,062	-0,064	0,099	0,622	0,534	Ho: accepted Ha: rejected
System Quality $\rightarrow$ Behavioral Intention	0,184	0,181	0,070	2,638	0,009	Ho: rejected Ha: accepted
Information Quality $\rightarrow$ Behavioral Intention	0,047	0,044	0,081	0,589	0,556	Ho: accepted Ha: rejected
Service Quality $\rightarrow$ Behavioral Intention	0,004	0,010	0,060	0,059	0,953	Ho: accepted Ha: rejected
Perception of Ease of Use $\rightarrow$ Behavioral Intention	0,289	0,288	0,093	3,120	0,002	Ho: rejected Ha: accepted
Perception of Usefulness $\rightarrow$ Behavioral Intention	0,408	0,409	0,084	4,830	0,000	Ho: rejected Ha: accepted

Table 7. (Specific Indirect Effect)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Description Ho: $\beta_2 = 0$ Ha: $\beta_2 \neq 0$
System Quality $\rightarrow$ Perception of Ease of Use $\rightarrow$ Behavioral Intention	0,102	0,103	0,045	2,278	0,011	Ho: rejected Ha: accepted
System Quality $\rightarrow$ Perception of Usefulness $\rightarrow$ Behavioral Intention	0,131	0,133	0,043	3,036	0,001	Ho: rejected Ha: accepted
Information Quality $\rightarrow$ Perception of Ease of Use $\rightarrow$ Behavioral Intention	0,125	0,124	0,049	2,537	0,006	Ho: rejected Ha: accepted
Information Quality $\rightarrow$ Perception of Usefulness $\rightarrow$ Behavioral Intention	0,160	0,160	0,051	3,112	0,001	Ho: accepted Ha: rejected
Service Quality $\rightarrow$ Perception of Ease of Use $\rightarrow$ Behavioral Intention	-0,010	-0,010	0,026	0,360	0,356	Ho: accepted Ha: rejected
Service Quality $\rightarrow$ Perception of Usefulness $\rightarrow$ Behavioral Intention	-0,025	-0,023	0,041	0,620	0,268	Ho: accepted Ha: rejected

According to the results of the hypothesis test presented in Tables 4 and 5, it can be concluded that:

1. The direct effect testing of the quality of the system on the perception of ease of use of inpatient EMR revealed a T value of 3.591, which is greater than 1.96 (t statistics count > t statistics table) and a p-value of 0.000 (p-value < 0.05). This means that there is a significant impact of the system quality variable (X1) on the perception of ease of use of inpatient EMR (X4)
2. The direct effect testing of the quality of the system on the perception of usefulness of inpatient EMR revealed a T value of 3.663, which is greater than 1.96 (t statistics count > t statistics table) and a p-value of 0.000 (p-value < 0.05). This means that there is a significant impact of the system quality variable (X1) on the perception of usefulness of inpatient EMR (X5).
3. The direct effect testing of the information quality on the perception of ease of use of inpatient EMR revealed a T value of 4.308, which is greater than 1.96 (t statistics count > t statistics table) and a p-value of 0.000 (p-value < 0.05). This means that there is a significant impact of the information quality variable (X2) on the perception of ease of use of inpatient EMR (X4).
4. The direct effect testing of the information quality on the perception of usefulness of inpatient EMR revealed a T value of 4.294, which is greater than the T statistics table value of 1.96, but the p-value of 0.953 is greater than 0.05. This means that there is no significant impact of the service quality variable (X3) on the intention to use inpatient EMR (Y).
5. The results of testing the direct effect of service quality on the perception of ease of use EMR hospitalization showed that the value of T 0.389 is smaller than 1.96 (t statistics count > t statistics table) and p-value of 0.697 (p-value > 0,05). There was no significant effect of service quality variable (X3) on the perception of ease of using inpatient EMR (X4).
6. The results of testing the direct effect of service quality on the perception of usability using EMR hospitalization showed that the value of T 0.622 is smaller than 1.96 (t statistics count > t statistics table) and p-value of 0.534 (p-value > 0,05). There was no significant effect of service quality variable (X3) on the perception of the usefulness of using inpatient EMR (X5).
7. The results of testing the direct effect of system quality on behavioral intention using inpatient EMR showed that the value of T 2.638 was greater than 1.96 (t statistics count > t statistics table) and p-value of 0.009 (p-value < 0,05). There was a significant effect of system quality variable (X1) on behavioral intention using inpatient EMR (Y).
8. The results of testing the direct effect of information quality on behavioral intention using inpatient EMR showed that the T value of 0.589 was smaller than 1.96 (t statistics count > t statistics table) and p-value of 0.556 (p-value > 0,05). There was no significant effect of information quality variable (X2) on behavioral intention using inpatient EMR (Y).
9. The results of testing the direct effect of service quality on behavioral intentions

- using inpatient EMR showed that the value of T 0.059 is smaller than 1.96 (t statistics count > t statistics table)
10. The results of testing the direct effect of ease of use perception on behavioral intention using inpatient EMR showed that the T value of 3.120 was greater than 1.96 (t statistics count > t statistics table) and p-value of 0.002 (p-value < 0,05). There was a significant effect of ease of use perception variable (X4) on behavioral intention using inpatient EMR (Y). Path coefficient (path coefficient) between these two variables is 0.289; with p-value equal to 0.002. This suggests that perception of ease of use has a significant effect on behavioral intention using inpatient EMR.
 11. The results of testing the direct effect of usefulness perception on behavioral intention using inpatient EMR showed that the T value of 4.830 was greater than 1.96 (t statistics count > t statistics table) and p-value of 0,000 (p-value < 0,05). There was a significant effect of usefulness perception variable (X5) on behavioral intention using inpatient EMR (Y).
 12. The results of testing the indirect effect of system quality on behavioral intention using inpatient EMR through ease of use perception showed that the T value of 2.278 was greater than 1.96 (t statistics count > t statistics table) and p-value of 0.011 (p-value < 0,05). There was a significant indirect effect of the system quality variable (X1) on behavioral intention using inpatient EMR (Y) through the perception of ease of use.
 13. The results of testing the indirect effect of system quality on behavioral intention using inpatient EMR through usefulness perception showed that the T value of 3.036 was greater than 1.96 (t statistics count > t statistics table) and p-value of 0.001 (p-value < 0,05). There was a significant indirect influence of system quality variable (X1) on behavioral intention using inpatient EMR (Y) through usefulness perception.
 14. The results of testing the indirect influence of information quality on behavioral intention using inpatient EMR through ease of use perception showed that the value of T 2.537 is greater than 1.96 (t statistics count > t statistics table) and p-value of 0.006 (p-value < 0,05). There was a significant indirect effect of information quality variable (X2) on behavioral intention using inpatient EMR (Y) through the perception of ease of use.
 15. The results of testing the indirect influence of information quality on behavioral intentions using inpatient EMR through the perception of usefulness showed that the value of T 3.112 is greater than 1.96 (t statistics count > t statistics table) and p-value of 0.001 (p-value < 0,05). There is a significant indirect influence of information quality variable (X2) on behavioral intention using inpatient EMR (Y) through the perception of usefulness.
 16. The results of testing the indirect effect of service quality on behavioral intention using inpatient EMR through the perception of ease showed that the value of T 0.369 is smaller than 1.96 (t statistics count > t statistics table) and p-value of 0.0356 (p-value > 0,05). There was no indirect influence of information

quality variable (X3) on behavioral intention using inpatient EMR (Y) through perception of ease.

17. The results of testing the indirect effect of service quality on behavioral intentions using inpatient EMR through the perception of usefulness showed that the value of T 0.620 is smaller than 1.96 (t statistics count > t statistics table) and p-value of 0.268 (p-value < 0,05). There was no indirect effect of service quality variable (X3) on behavioral intention to use inpatient EMR (Y) through the perception of usefulness.

Result of R Square

Table 8. Result of R square

	R Square	R Square Adjusted
Perception of Usefulness	0,387	0,374
Perception of Ease of Use	0,492	0,481
Behavioral Intention	0,653	0,640

Based on the above processing results, it can be stated that the influence of the variables of system quality, information quality, service quality, perception of ease, and perception of usefulness on behavioral intention is 65.3% (high influence). The influence of the variables of system quality, information quality, and service quality on the perception of ease variable is 38.7% (moderate influence) and on the perception of usefulness variable is 49.2% (moderate influence).

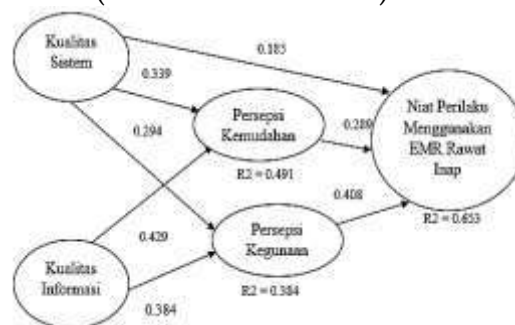


Figure 3. Research Model Fit

Table 9. Hypothesis Results

Hypothesis	Hypothesis Statement	Results of T	P-value	Description
H1	There is an influence of System Quality on the Perception of Ease of Use of Inpatient EMR.	3.591	0.000	Hypothesis Accepted
H2	The quality of the system has an influence on the perceived usefulness of inpatient EMR.	3.663	0.000	Hypothesis Rejected
H3	There is an influence of Information Quality on the perception of ease of use of Inpatient EMR.	4.308	0.000	Hypothesis Accepted
H4	The quality of information has an impact on the perceived usefulness of Inpatient EMR.	4.294	0.000	Hypothesis Accepted
H5	The quality of service has an influence on the perception of the ease of use of inpatient EMR.	0.389	0.697	Hypothesis Rejected
H6	The quality of service has an influence on the perceived usefulness of inpatient EMR.	0.622	0.534	Hypothesis Rejected

H7	There is an influence of System Quality on the Behavioral Intention to Use Inpatient EMR.	2.638	0.009	Hypothesis Accepted
H8	There is an influence of Information Quality on the Behavioral Intention to Use Inpatient EMR.	0.589	0.556	Hypothesis Rejected
H9	There is an influence of Service Quality on the Behavioral Intention to Use Inpatient EMR.	0.059	0.953	Hypothesis Rejected
H10	There is an influence of Perception of Ease of Use on the Behavioral Intention to Use Inpatient EMR.	3.120	0.002	Hypothesis Accepted
H11	There is an influence of Perception of Usefulness on the Behavioral Intention to Use Inpatient EMR.	4.830	0.000	Hypothesis Accepted

The influence of system quality on the perception of inpatient EMR ease of use.

In this study, the quality of the system was found to have a significant effect on the perception of ease of use in inpatient EMR, with a p-value of 0.000. This is in line with the findings of (Martono et al., 2020) and (Al-Rahmi et al., 2021), who showed that the quality of the system has a significant impact on user perception of ease of use. Moreover, the quality of the system was found to have a significant indirect effect on behavioral intention through this perceived ease of use, with a p-value of 0.011. The path-coefficient value for the effect of system quality on perceived ease of use was 0.353, indicating that a one-unit increase in system quality leads to a 35.3% increase in perceived ease of use.

These findings confirm the theory of (DeLone & McLean, 2016) that good system quality leads to a user's intention to use the system. It also aligns with the theory proposed by (DeLone & McLean, 2003) that ease of use is one of the indicators of good system quality. Several system quality measurement indicators, including "EMR inpatient is easy to use" in SyQ5, received a high index score with the majority (61.8%) of respondents agreeing. This is consistent with the definition of system quality as "the extent to which users find the system easy to use, connected and learnable, and enjoyable to use" proposed by (DeLone & McLean, 2016).

The influence of system quality on the perceived usefulness of inpatient EMR.

In this study, the quality of the system has been found to have an impact on the perceived usefulness of inpatient EMR with a p-value of 0.000. This is consistent with the findings of (Martono et al., 2020), which stated that the quality of the system determines the perceived usefulness by users. The study by (Adeyemi & Issa, 2020) in 2020, mentioned that quality is a variable inherent in the mandatory perception of SI users.

In this study, SI users are specialist doctors who are not hospital employees but partners, so the mandatory nature does not apply to them. However, in this study, the quality of the system also affects the perceived usefulness of non-mandatory users. The path-coefficient value of the quality of the system towards the perceived usefulness is 0.320, which means that every increase in one unit of the system's quality

leads to an increase of 32% in perceived usefulness. The quality of the system also indirectly affects behavioral intention through perceived usefulness, with a p-value of 0.001.

The influence of information quality on the perception of ease of use of inpatient EMR.

In this study, the influence of information quality on the ease of use of inpatient EMR was found with a p-value of 0.000. The impact of information quality was found to be more positive than that of system quality (Alshibly, 2014). This is consistent with the findings of this research, where the T-statistics value of IQ was greater than SQ (4.349 vs 3.563).

Information quality also had a significant indirect effect on behavioral intention through the perception of ease (p-value 0.006). The path-coefficient value of information quality on ease perception was 0.433, indicating that an increase of one unit in information quality leads to a 43.3% increase in ease perception. This holds the highest influence on ease perception and aligns with previous research that information quality has a greater positive impact than system quality (Alshibly, 2014). Ease perception also moderates the influence of system and information quality on behavioral intention, with path-coefficient values of 0.102 and 0.125, indicating a 10.2% and 12.5% increase in behavioral intention, respectively.

The influence of information quality on the perception of the usefulness of inpatient EMRs.

The quality of information has been proven to have a significant influence on the perception of ease of use, with a p-value of 0.000. This is consistent with the studies conducted by (Al-Rahmi et al., 2021) and (Martono et al., 2020). However, according to the findings of Ismael (Adeyemi & Issa, 2020), the quality of information affects the perception of usefulness in mandatory use of Information System.

Nevertheless, in this study, the respondents were specialist doctors who had a partnership status with the hospital, and the results were similar to the previous research mentioned. Therefore, it can be said that whether it is mandatory or not, the quality of information has an impact on the perception of usefulness. The quality of information also indirectly influences behavioral intention through the perception of usefulness (p-value 0.001).

The data processing results with T-statistics $IQ > SQ$ towards the perception of usefulness (4.456 vs 3.609) indicate that the quality of information has a stronger influence than the quality of the system. This implies that the quality of information generated by inpatient EMR has a significant effect on its perceived usefulness.

This finding is also consistent with the study conducted by (Alshibly, 2014), which stated that the quality of information has a larger positive impact compared to the quality of the system. The path-coefficient value of the quality of information towards the perception of usefulness is 0.392, which means that for every one unit increase in the quality of information, the perception of usefulness increases by 39.2%.

This value is also in line with (Alshibly, 2014) findings, which stated that the quality of information has a larger positive impact compared to the quality of the system.

The influence of service quality on the perception of inpatient EMR's ease of use.

The proven impact of service quality on the perception of ease of use, both directly and indirectly, with p-values of 0.684 and 0.356, was insignificant. This contradicts previous research results by (Al-Rahmi et al., 2021), Chet et. al, 2016, and Park & Kwon, 2016, (Martono et al., 2020), that service quality does indeed affect the perception of ease of use.

However, in Gabriela Bianca's 2023 study published in the Journal of Indonesian Health Policy and Administration, which evaluated the perceived ease of use of the E-Service Quality in the Peduli Lindungi application during the Covid-19 pandemic, similar results were found, indicating that there was no effect of the application's service quality on the ease of use. In this study, it is interpreted that the existing features or format of the application makes information retrieval difficult for users.

The path-coefficient value for quality of service on the perception of ease of use is -0.033, indicating that a one-unit increase in the quality of service results in a 3.3% decrease in the perception of ease of use. Indirectly, the quality of service has no influence on behavioral intention through the perception of ease with a path-coefficient value of -0.01.

According to (Maulana, 2018) book, as cited by (Lupiyoadi, 2014), one of the indicators of service quality is the ability of the service, such as speed, competitiveness, ease, and usefulness in improving a product.

The influence of service quality on the perception of the usefulness of inpatient EMR.

Service quality is not proven to have a significant effect either directly or indirectly on the perception of usability with p-value 0.535 and 0.268. This is in line with research from (Martono et al., 2020), it was found that service quality does not affect the perception of usability. In contrast to the results of Research Park & Kwon, 20016 that dimensi ISSM proved significant as a determinant of the perception of benefits, where there is a significant influence on perceived usefulness. Likewise according to (Krisdina et al., 2022) that the quality of service affects the user's behavioral intention to use SI and the perception of usefulness also affects the behavioral intention to use SI, so it is considered that the quality of service affects the perception of usefulness. Path-coefficient value service quality to the perception of usefulness is -0.062, which means that every one unit increase in service quality then the perception of usability decreased by 6.2%.

Indirectly also the quality of service has no influence on the intention of behavior through the perception of the usefulness of value path-coefficient -0.025. This means that for every one unit increase in service quality through perceived usefulness, behavioral intention decreases by 2.5%. According To (Maulana, 2018) in his book,

quoted by (Lupiyoadi, 2014), states that one indicator of service quality is the ability of service that is speed, competition, ease and usefulness in terms of improving a product.

This theory explains the dimensions of service quality, that users not only pay attention to the presence or absence of deterioration in the quality of service but also about the time or schedule of service, the process of communication with users, the frequency of services to improve products and others. These indicators can reflect the existence of differences in the standards of each individual regarding the service received, where the ability of the service can produce a decision about the quality or not of the service received by the user subjectively.

The concept of quality is of a relative nature, which depends on the perspective used to define its characteristics and specialization. . The higher this service indicates frequent errors or unreliability of inpatient EMR, which causes waiting time and user work efficiency to decrease, then the intention to use it also decreases.

The quality of service here is different from the concept of service systems in the business world. Results of three-box method, each indicator of the perception of usefulness is high. However, of the three, the PU3 indicator "time efficiency", this shows the lowest value of 112.25. This is in accordance with the results of interviews conducted previously that the user visit time extends due to frequent EMR error and slow connection.

Venkatesh and (Davis, 1989) that the perception of usability is a result of the perception in which the user/ someone believes that by using the technology or system then the performance and productivity will increase. Perceived usefulness is a person's point of view that using a system will be useful to improve job performance. Indicators that can be used to measure the perception of usability, among others, increase productivity and user performance, as well as improve time efficiency.

The influence of system quality on the intention to use inpatient EMR.

In this study the quality of the system affects the intention of behavior using EMR hospitalization with p-value From 0.012 indirectly through the perception of convenience and usability (p-value 0.011 and 0.001). This is in line with the theory of (DeLone & McLean, 2003) that the better the quality of the system, the more users who intend to continue to use it. In (Mailizar et al., 2021), system quality can be a predictor of behavioral intention to use information systems.

The quality of the system has a significant influence on the intention of behavior using SI (Martono et al., 2020). Other studies suggest that the quality of the system has a greater impact on satisfaction and intention behavior in using SI. (Iivari, 2005). There is one study by (Krisdina et al., 2022) which mentions that the quality of the system has no influence on the behavioral intention to use SI.

In this study, the system quality dimension has a high category index which describes that the quality of the system in the hospital is good. By value path-coefficient system quality to behavioral intention, the value is 0.184 which means in every one unit increase of system quality, then the intention of the behavior will increase by 18.4%.

Through the perception of ease of use and usefulness as described above, it is also found that the quality of the system has an indirect effect on behavioral intentions. (Venkatesh et al., 2012) states that the intention of behavior is the desire of the individual to behave, and is an attitude of acceptance or rejection where an individual can choose and decide to use/ wear something or not.

If a technology can be well received, it will form behavioral intentions including the dimensions of user needs to use technology, use it continuously, use it to shorten and facilitate work and will recommend to others. The distribution of behavioral intention assessment indicators shows that the majority of respondents agree or have behavioral intentions using EMR. All indexes of each indicator fall into the high category, with the average index being 119.3.

The influence of information quality on the intention to use inpatient EMR behavior.

In this study, the quality of information (IQ) is not proven to affect the intention of behavior using EMR, p-value 0.527. In contrast to the research of (Martono et al., 2020) and (Krisdina et al., 2022), which states that the quality of information has a significant influence on the intention of behavior using information systems. Research by (Ramadhani & Sukawati, 2021) states that the quality of information does not have a significant effect on the quality of information on repurchase intentions.

By value path-coefficient the quality of information on behavior nait, the value is 0.047 which means that in every one unit increase of information quality, then the intention of behavior will increase by 4.7%.

Although it does not significantly affect the intention of behavior, the direction of influence is positive and the quality of information has a significant effect indirectly on the intention of behavior using EMR hospitalization through the perception of ease and usefulness. Calculation results three-box method on the quality of information (KI) shows the results of the high category index >110 with the results of the calculation of the final mean of the high category index.

Among the high there is one indicator whose value is the lowest, namely completeness. This is in accordance with the results of interviews that have been conducted previously that 80% of users feel the data or information presented by inpatient EMR is not complete because it has not been fully integrated.

Incompleteness of this information can lead to an extended visit time, as the result of the calculation of the three-box method of behavioral intention regarding the efficiency of visit time is the lowest indicator value. One indicator of the quality of information according to (DeLone & McLean, 2003) is the completeness of information. A quality information system must provide complete information because this information is certainly needed by users in terms of decision making.

The influence of service quality on the intention to use inpatient EMR.

In this study the quality of service is not proven to affect the intention of good behavior directly (p-value 0.535) and indirectly through the perception of ease of use

and usefulness to use EMR hospitalization with the value p-value 0.356 and 0.268. This is in line with (Martono et al., 2020) research, that only system quality and information quality can be predictors of intentions to use information systems, while service quality is not proven to have a significant effect on intentions to use information systems.

This is different from the findings of previous researchers who found a significant effect on service quality (Spreng & Mackoy, 1996). According to the path-coefficient value of service quality to behavioral intention, the value is 0.004 which means that in every one unit increase of service quality, then the intention of behavior will increase by 0.4%.

Although it does not significantly affect the intention of behavior, the direction of influence is positive. Service quality does not have an indirect influence on behavioral intentions even after being moderated by perceptions of ease of use and usefulness. Calculation of service quality category index into the medium category, but the high category index is found in the behavioral intention dimension.

Users do not find significant obstacles in using the information system and can solve problems without going through the information system user services, because the perception of ease and usefulness obtained from the results of data processing in this study is in the high category index.

The results showed that users of information systems do not care about the service quality provided by service providers (hospital management). It can be concluded that the service quality does not have a significant effect on behavioral intentions using inpatient EMR.

The influence of perceived ease of use on the behavioral intention to use inpatient EMR.

Perceived ease of use (PEOU) was shown to have a significant effect on behavioral intentions using inpatient EMR, p-value 0.002.

Many other studies support this theory, such as research by (Gomer & Kusumapradja, 2020); (Abu-Dalbouh, 2013); (Martono et al., 2020); (Al-Rahmi et al., 2021); (Krisdina et al., 2022); whereas in contrast to research by (Okediran et al., 2020) which states the perception of ease of use has no effect on behavioral intentions. The path coefficient value of perception of ease to behavioral intention is 0.289, which means that in every increase of one unit of perception of ease there will be an increase in behavioral intention as much as 28.9%.

TAM by (Davis, 1993) argues that a person's attitude towards the target use of technology is influenced by a person's perception of the ease and usefulness of the technology. The level of intent will affect the level of use of a person's information system. Information systems that are easy to use will be more often used by users. Users will not use the system if the features are complex, even if they are very useful.

This is also supported by the research of (Martono et al., 2020). On the perception of ease (PEOU) assessed from 3 indicators, the majority of respondents agreed the use of inpatient EMR is easy and have behavioral intentions to use it with

the results of the calculation of the average total index of high category. This is consistent with Davis' theory in (Al-Rahmi et al., 2021) that the perception of ease of use (PEOU) describes the extent to which an individual considers that the use of a particular system will be easy.

Based on the calculation results three-box method the average end of these three indicators is 112.75 which means the perception of ease (PM) has a high category index and the highest value indicates that users judge that using and learning about EMR is not difficult and does not require great effort. The use of a system technology is a process in which an individual translates or interprets stimuli that enter his senses stating that a system/ technology is easy to use and does not require effort to use it.

Dimensions used in accordance with The Theory of (Venkatesh & Davis, 2000), the system is easy to use, no effort is needed to interact and operate the technology system. These results give the meaning that the perception of ease has an effect on the intention of behavior using EMR.

The influence of perceived usefulness on the intention to use inpatient EMR.

Perception of usefulness was shown to have a significant effect on behavioral intentions using inpatient EMR, p-value 0,000. This is in line with the results of previous research (Akhlq & Ahmed, 2015); (Camilleri & Camilleri, 2019); (Kesharwani & Singh Bisht, 2012); (Kim & Chiu, 2018); (Nguyen, 2020).

The results of descriptive data processing on the indicators of this study for the dimensions of usability perception and behavioral intention, both of which have a high category index. Based on these findings, respondents felt the use of inpatient EMR was useful and had a high behavioral intention to continue using it.

The path coefficient value of usefulness perception to behavioral intention is 0.408, which means that in every increase of one unit of usefulness perception, there will be an increase in behavioral intention of 40.8%. This number is the highest among other variables, so it can be concluded that the greatest influence on behavioral intention is the perception of usefulness.

This research solely employed a questionnaire as its data collection tool (cross-sectional), wherein one of the drawbacks of using questionnaires is that the data obtained will depend on the respondents' answers. Respondents may give dishonest or inaccurate answers due to the closed nature of the questions and the difficulty in expanding on them.

Therefore, a further evaluation is needed to confirm the findings by conducting interviews. The limitations of manpower and time, both from the researcher, prevented the direct collection of questionnaires from each respondent.

The busyness of the respondents, who are specialist doctors, requires effort to motivate them to complete the questionnaire amidst their busy schedule.

D. CONCLUSIONS

The factors that directly influence the intention to use inpatient EMR are system quality, perceived ease of use, and perceived usefulness. The most influential factor to the intention of using inpatient EMR is perceived usefulness. This means that the more useful an information system is (EMR) in improving productivity and user performance, the higher the intention of users to use inpatient EMR.

System quality significantly affects perceived ease of use directly. This means that it is important to improve system quality, especially for its functions, flexibility, reliability, and access connection to improve ease of use among users for inpatient EMR. This is shown to indirectly affect the intention to use through perceived ease of use.

System quality also significantly affects perceived usefulness. This means that it is important to improve system quality to improve the creativity and productivity of users, especially in terms of time efficiency, which indirectly affects the intention to use EMR through perceived usefulness.

Information quality significantly affects perceived ease of use and indirectly affects the intention to use through this perception. It is important to improve information quality, especially in terms of data completeness or integration to improve user's perceived ease of use, where with complete data, users will find it easier to obtain information and simplify their work.

Information quality significantly affects perceived usefulness and indirectly affects the intention to use through both perceptions. Therefore, it is important to improve information quality, especially in terms of data completeness or integration, so that users perceive the usefulness of EMR, where with complete data, users will be more productive and creative.

Service quality is not proven to affect perceived ease of use and intention to use either directly or indirectly. This study shows that information system users do not care about the quality of service provided by the service provider (hospital management), as long as the quality of the EMR system and information is good and users perceive it as easy to use and beneficial, then they will continue to intend to use inpatient EMR.

Service quality is not proven to affect perceived usefulness, and intention to use either directly or indirectly. This study shows that information system users do not care about the quality of service provided by the service provider (hospital management), as long as the quality of the EMR system and information is good and users perceive it as easy to use and beneficial, then they will continue to intend to use inpatient EMR.

System quality significantly affects behavioral intention directly. This means that it is important to improve system quality, especially for its functions, flexibility, reliability, and access connection to increase the behavioral intentions from users to continue using inpatient EMR.

Information quality is not proven to affect behavioral intention directly, but significantly affects behavioral intention indirectly through perceived ease of use.

This means that even the information quality has no effect to behavioral intention directly, but it has important role in increasing perceived ease of use hence increase behavioral intention to use inpatient EMR.

Service quality is not proven to affect, behavioral intention either directly or indirectly. This means that the higher this service indicates frequent errors or unreliability of inpatient EMR, which causes waiting time and user work efficiency to decrease, then the intention to use it also decreases Perceived ease of use significantly affects the intention to use, and it is important to maintain this perception among users to ensure the intention to use EMR remains high. One of the efforts to do this is to improve the quality of the EMR system and information.

Perceived ease of use significantly affects the intention to use, and it is important to maintain this perception among users to ensure the intention to use EMR remains high. One of the efforts to do this is to improve the quality of the EMR system, especially information quality, which has the greatest influence among other dimensions.

Perceived usefulness significantly affects the intention to use, and it is important to maintain this perception among users to ensure the intention to use EMR remains high. One of the efforts to do this is to improve the quality of the EMR system, especially information quality, which has the greatest influence among other dimensions.

REFERENCES

1. Abu-Dalbouh, H. M. (2013). A questionnaire approach based on the technology acceptance model for mobile tracking on patient progress applications. *J. Comput. Sci.*, 9(6), 763–770.
2. Adeyemi, I. O., & Issa, A. O. (2020). Integrating information system success model (ISSM) and technology acceptance model (TAM): proposing students' satisfaction with university Web portal model. *Record and Library Journal*, 6(1), 69–79.
3. Akhlaq, A., & Ahmed, E. (2015). Digital commerce in emerging economies: Factors associated with online shopping intentions in Pakistan. *International Journal of Emerging Markets*, 10(4), 634–647.
4. Al-Rahmi, A. M., Shamsuddin, A., Alturki, U., Aldraiweesh, A., Yusof, F. M., Al-Rahmi, W. M., & Aljeraiwi, A. A. (2021). The influence of information system success and technology acceptance model on social media factors in education. *Sustainability*, 13(14), 7770.
5. Alshibly, H. H. (2014). Evaluating E-HRM success: A validation of the information systems success model. *International Journal of Human Resource Studies*, 4(3), 107–124.
6. Camilleri, M. A., & Camilleri, A. C. (2019). The students' readiness to engage with mobile learning apps. *Interactive Technology and Smart Education*, 17(1), 28–38.
7. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319–340.
8. Davis, F. D. (1993). User acceptance of information technology: system

- characteristics, user perceptions and behavioral impacts. *International Journal of Man-Machine Studies*, 38(3), 475–487.
9. DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information Systems Research*, 3(1), 60–95.
 10. 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(4), 9–30.
 11. DeLone, W. H., & McLean, E. R. (2016). Information systems success measurement. *Foundations and Trends® in Information Systems*, 2(1), 1–116.
 12. Ghozali, I. (2008). *Structural Equation Model Metode Alternatif dengan Partial Least Square*. Semarang: Badan Penerbit Undip.
 13. Gomer, S., & Kusumapradja, R. (2020). Acceptance model of hospital information management system: case of study in Indonesia. *European Journal of Business and Management Research*, 5(5).
 14. Iivari, J. (2005). An empirical test of the DeLone-McLean model of information system success. *ACM SIGMIS Database: The DATABASE for Advances in Information Systems*, 36(2), 8–27.
 15. Kesharwani, A., & Singh Bisht, S. (2012). The impact of trust and perceived risk on internet banking adoption in India: An extension of technology acceptance model. *International Journal of Bank Marketing*, 30(4), 303–322.
 16. Kim, T., & Chiu, W. (2018). Consumer acceptance of sports wearable technology: The role of technology readiness. *International Journal of Sports Marketing and Sponsorship*, 20(1), 109–126.
 17. Krisdina, S., Nurhayati, O. D., & Nugraheni, D. M. K. (2022). Hybrid Model Based on Technology Acceptance Model (TAM) & Information System Success Model (ISSM) in Analyzing the Use of E-Health. *E3S Web of Conferences*, 359, 5003.
 18. Livinus, V., Adhikara, M. A., & Kusumapradja, R. (2021). Hospital management information system usefulness in the health services industry at Indonesia: mandatory or voluntary. *JMMR (Jurnal Medicoeticolegal Dan Manajemen Rumah Sakit)*, 10(1), 1–12.
 19. Lupiyoadi, R. (2014). *Manajemen pemasaran jasa berbasis kompetensi*.
 20. Mailizar, M., Burg, D., & Maulina, S. (2021). Examining university students' behavioural intention to use e-learning during the COVID-19 pandemic: An extended TAM model. *Education and Information Technologies*, 26(6), 7057–7077.
 21. Martono, S., Nurkhin, A., Mukhibad, H., Anisykurlillah, I., & Wolor, C. W. (2020). Understanding the employee's intention to use information system: Technology acceptance model and information system success model approach. *The Journal of Asian Finance, Economics and Business (JAFEB)*, 7(10), 1007–1013.
 22. Maryati, Y. (2021). Evaluasi Penggunaan Electronic Medical Record Rawat Jalan Di Rumah Sakit Husada Dengan Technology Acceptance Model. *Jurnal Manajemen Informasi Kesehatan Indonesia*, 9(2), 190.
 23. Maulana, R. I. (2018). Promosi dan Store Atmosphere Terhadap Shopping Emotion dan Impulse Buying. *Jurnal Ecodemica: Jurnal Ekonomi Manajemen Dan Bisnis*, 2(2).

24. Nguyen, O. T. (2020). Factors affecting the intention to use digital banking in Vietnam. *The Journal of Asian Finance, Economics and Business*, 7(3), 303–310.
25. Okediran, O. O., Wahab, W. B., & Oyediran, M. O. (2020). Factors Determining the Intention to Use Electronic Health Records: An Extension of the Technology Acceptance Model. *Journal of Scientific Research and Reports*, 26(7), 119–133.
26. Petter, S., DeLone, W., & McLean, E. (2008). Measuring information systems success: models, dimensions, measures, and interrelationships. *European Journal of Information Systems*, 17, 236–263.
27. Rabaai, A. (2009). Assessing information systems success models: Empirical comparison (Research in Progress). *Proceedings of the 20th Australasian Conference on Information Systems*, 447–455.
28. Ramadhani, M. D., & Sukawati, T. G. R. (2021). The role of customer satisfaction mediates the effect of service quality and quality of the shopee. co. id website on repurchase intention. *American Journal of Humanities and Social Sciences Research (AJHSSR)*, 5(2), 570–579.
29. Seddon, P., & Kiew, M.-Y. (1996). A partial test and development of DeLone and McLean's model of IS success. *Australasian Journal of Information Systems*, 4(1).
30. Spreng, R. A., & Mackoy, R. D. (1996). An empirical examination of a model of perceived service quality and satisfaction. *Journal of Retailing*, 72(2), 201–214.
31. Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186–204.
32. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 425–478.
33. Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 157–178.