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Digital Transformation of Services in Hospitals: The Role of Service Quality and Digital Readiness

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ABSTRACT

Digital transformation in the health sector places the Hospital Management Information System as a strategic element in improving operational efficiency and service quality. However, the success of SIMRS implementation is not only determined by technical aspects, but also by the digital readiness of users. This research aims to analyze the determinants of the success of SIMRS implementation by integrating the Delone and McLean Information Systems success models and digital readiness variables as moderation. This study uses a quantitative approach with a survey method of 118 SIMRS users in several hospitals in the city of Bandung. Data were collected through an online questionnaire and analyzed using Partial Least Squares-Structural Equation Modeling (PLS-SEM). The results of the study show that the quality of the system affects the net benefit through the end user of SIMRS, but not through user satisfaction. Meanwhile, information quality has the most consistent influence on net benefits both through SIMRS end-users and user satisfaction. The quality of service only affects the net benefit through user satisfaction, but not through the end user of SIMRS. In addition, digital readiness has been shown to strengthen the influence of system quality and information quality on the use of SIMRS, but does not moderate user satisfaction. These findings confirm that digital readiness strengthens technical system utilization, while user satisfaction is primarily driven by information quality and overall user experience. The study implies that hospital management should prioritize enhancing information quality, system reliability, and digital readiness of human resources to optimize SIMRS benefits.

INTRODUCTION

The adoption of information technology in the contemporary era has placed digital capabilities as a strategic mandate for organizations, including healthcare institutions (Alotaibi et al., 2025). Digital transformation in this sector is not only software implementation, but also the restructuring of work systems and operational models. These initiatives are important for evidence-based decision-making, aligning synergies between functional units, and reorganizing interactions between service providers and users to achieve better service quality (Agustian et al., 2025). One of the tangible manifestations of this transformation is the implementation of the Hospital Management Information System (*SIMRS*), which functions as an integrated system to manage all hospital business processes, from medical services to managerial administration (Pane et al., 2023; Rifial et al., 2025). The integration of *s* enables the management and storage of data quickly, accurately, and efficiently, making it a strategic element in supporting the improvement of the quality and efficiency of hospital operations (Ira et al., 2024).

The digitalization of health facilities in Indonesia is showing progress through the implementation of *SIMRS*. Data from the Ministry of Health's 2022 rapid survey reflects a significant achievement, namely 88% or 2,291 out of 2,595 hospitals in Indonesia have successfully implemented *SIMRS* (Nurcahyani & Sugiarsi, 2024). However, the 12% of hospitals that have not yet adopted this system represent an implementation gap that needs to be the focus of strategic policies to achieve comprehensive national health digitalization (Azizah, 2025). Previous research has shown that the obstacles to the implementation of *SIMRS* are not only due to technological limitations, but also complexity involving human factors, digital readiness, organizational support, and managerial policies (Permana et al., 2023; Rahmaddian et al., 2025).

This condition confirms that the implementation of *SIMRS* will only be effective if it is evaluated multidimensionally, including technical, human, and organizational factors that are proven to be interconnected (Rahmaddian et al., 2025; Agustian et al., 2025). Therefore, the strategic steps forward must focus on an in-depth analysis of the obstacles faced by hospitals, in order to ensure the achievement of sustainable and equitable national health digitalization. Therefore, more studies are still needed on the inhibiting and driving factors for the successful implementation of this digital system in hospitals.

Previous research has measured the success of *SIMRS* implementation using the DeLone and McLean (D&M) Information Systems Success Model. This model is a conceptual framework that is recognized for its use in various sectors, including health (Alshehri & Hadoussa, 2025). This model assesses success through six dimensions divided into three levels: (1) Inputs consisting of system quality, information quality, and service quality; (2) Processes that include the use of the system (*Stuttgar*) and user satisfaction; and (3) *Output* In the form of net benefits (*Net Benefit*) as the final result (Chimbo & Motsi, 2024; Agustian et al., 2025). The system quality dimension focuses on the reliability and efficiency of the system; information quality emphasizes the accuracy and relevance of the data; while the quality of service reflects responsive technical support. Based on this model, all three input dimensions are shown to directly affect usage rates and user satisfaction, ultimately determining the benefits to the organization (Jad & Zainol, 2025; Agustian et al., 2025).

The relevance of the DeLone and McLean models in assessing the success of hospital information system implementation has been demonstrated in empirical findings. Zheng et al., (2023) and Agustian et al., (2025) demonstrate that the quality of systems, information, and services has a significant influence on user satisfaction and *Net Benefit* hospital, with a variable *Stuttgar* and *user satisfaction* act as the main mediator. Similar results were also reported Jad & Zainol, (2025) and Alshehri & Hadoussa, (2025) which confirms that the quality dimensions of systems, information, and services have an influence on user satisfaction and organizational benefits. Chimbo & Motsi, (2024) It also proves that the quality of information and systems improves user satisfaction and lowers medical errors as a form of the system's final benefit. In the context of Indonesia, Permana et al., (2023) shows the direction of a consistent relationship where the quality of systems, information, and services simultaneously increases the satisfaction of *SIMRS* users and the effectiveness of employee work. These results reinforce that the application of the DeLone and McLean models is relevant to assess the successful implementation of hospital information systems in various cultural contexts.

Although much has been done in the past on the DeLone and McLean models, there has been little analysis of digital readiness in the evaluation framework. Digital readiness includes technical skills, literacy, motivation, and infrastructure support, which are fundamental in determining the ability of users to adopt and adapt to technology (Bober et al., 2024). This low level of readiness can trigger user resistance, operational errors, and ultimately, degradation *Net Benefit* obtained (Putri et al., 2024). Research Zarlis (2024) shows that the individual technology readiness dimension (*Technology Readiness Index*/TRI) significantly affects user satisfaction. Meanwhile, Bober et al., (2024) emphasized that the high readiness of digital-based healthcare can improve employees' ability to adopt technology and increase satisfaction in using technology. Therefore, user satisfaction and *Net Benefit* of the use of information systems in hospitals should be analyzed by including the digital readiness variable as a variable that determines the extent of the positive impact of *SIMRS* on hospitals.

Despite extensive research on the DeLone and McLean model, several gaps remain. Previous studies have focused on direct relationships between quality dimensions and success indicators, neglecting the moderating role of individual user characteristics. Digital readiness has been largely overlooked in evaluating hospital information system success, particularly in developing countries like Indonesia where digital literacy varies significantly. Existing research has not comprehensively examined how digital readiness interacts with each quality dimension to influence both system usage and user satisfaction simultaneously. Furthermore, studies have not investigated the differential mediating roles of system usage versus user satisfaction in transmitting quality effects to net benefits, especially in mandatory system usage contexts like *SIMRS* where employees must use the system regardless of personal preferences.

This study offers several novel contributions. First, it integrates digital readiness as a moderating variable into the DeLone and McLean model, addressing the gap on individual user characteristics. Second, it simultaneously examines two mediating pathways system usage and user satisfaction to understand how quality dimensions translate into organizational benefits. Third, this research is conducted in Indonesian hospitals, where digital transformation is accelerating but empirical evidence on *SIMRS* success remains limited. Fourth, it investigates the moderating effects of digital readiness on each quality dimension separately, providing granular insights. Fifth, by examining direct and indirect effects through multiple mediators and moderators, this research provides a comprehensive understanding of *SIMRS* implementation mechanisms, offering theoretical contributions to information systems research and practical implications for hospital management in developing countries.

Based on this description, this study aims to analyze the factors that determine the success of *SIMRS* implementation, in particular by integrating the digital readiness dimension into the framework of the DeLone and McLean Models. The results of this research are expected to provide managerial contributions in the form of strategic policy recommendations for hospital management in increasing the effectiveness of information system implementation, strengthening the digital capacity of human resources, and optimizing the use of technology to support organizational performance in a sustainable manner. In addition, this research is expected to make an academic contribution by developing literature on the evaluation of the success of information systems in the health sector, especially through the

integration of digital readiness variables as a relevant dimension in the context of hospital digital transformation. Therefore, the model in this study is described as follows.

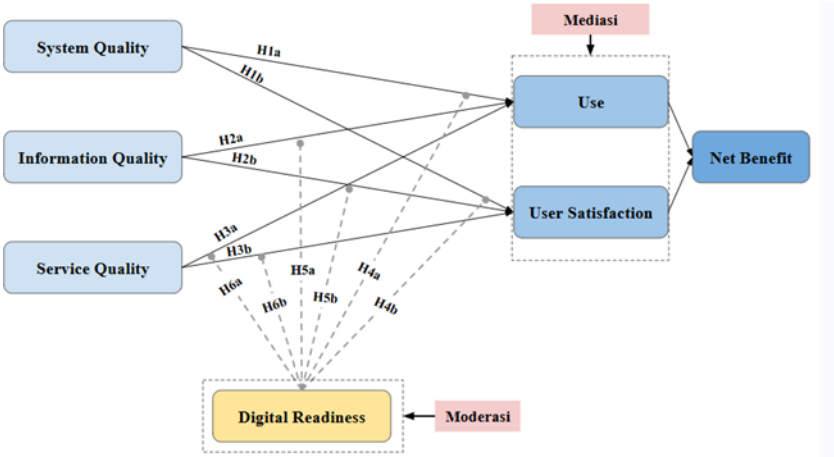

Figure 1. Research Model
Source: Researcher Construction (2026) based on DeLone & McLean (2003) and Bober et al. (2024)

Based on the research model, the researcher formulated several hypotheses as follows:
H1a: The quality of the system has a significant effect on *the net benefit* through the user as a mediator
H1b: System quality has a significant effect on *net benefits* through user satisfaction as a mediator
H2a: The quality of information has a significant effect on *the net benefit* through the user as a mediator
H2b: The quality of information has a significant effect on *the net benefit* through user satisfaction as a mediator
H3a: The quality of service has a significant effect on *the net benefit* through the user as a mediator
H3b: Quality of service has a significant effect on *net benefits* through user satisfaction as a mediator
H4a: *Digital readiness* moderates the influence of system quality on *SIMRS* users.
H4b: *Digital readiness* moderates the effect of system quality on *SIMRS* user satisfaction.
H5a: *Digital readiness* moderates the influence of information quality on *SIMRS* users.
H5b: *Digital readiness* moderates the influence of information quality on *SIMRS* user satisfaction.
H6a: *Digital readiness* moderates the effect of service quality on *SIMRS* users.
H6b: *Digital readiness* moderates the effect of service quality on *SIMRS* user satisfaction.

METHOD

This study employed a quantitative research design with a survey method to examine the factors determining the success of Hospital Management Information System (*SIMRS*) implementation. A quantitative approach was chosen as it allows for objective measurement of relationships between variables and hypothesis testing through statistical analysis. The

research design is explanatory, aiming to explain the causal relationships between system quality, information quality, service quality, system usage, user satisfaction, digital readiness, and net benefits.

The population in this study is all hospital staff in the city of Bandung who actively use *SIMRS*, both medical and non-medical personnel. Meanwhile, the sampling techniques used are *Non-probability sampling* with the *purposive sampling*. Michelotto & Joia, (2024) explains that this technique allows researchers to obtain data from individuals who understand and are directly involved in its use. The criteria used are that respondents must be permanent employees and have used *SIMRS* for at least six months.

Sample determination using the "*10 times rule*" from Hair et al., (2021), which is 10 times the number of paths to a single construct, with a minimum of 100 respondents for PLS-SEM (Yusuf, 2022). Therefore a sample count of 100 is sufficient and qualified.Data collection was carried out using a structured questionnaire instrument which was carried out online using *Google Form*. Each item is measured using a five-point Likert scale (1=strongly disagree to 5=strongly agree).

Each research variable was measured using a measurement tool from previous research. Independent variables refer to the indicators of the DeLone & McLean model consisting of system quality, information quality, service quality (Agustian et al., 2025). System user variables and user satisfaction are positioned as mediating variables that bridge the relationship between system quality, information, and service to *Net Benefit* (Zheng et al., 2023). The moderation variable, namely digital readiness, is measured using *Technology Readiness Index*/TRI developed by Putri et al. (2024). *Net benefit* describe the level of satisfaction and benefits that users feel towards the implementation of *SIMRS*, measured by the indicators developed Chimbo & Motsi (2024).

The data obtained is then processed and analyzed using the *Partial Least Squares - Structural Equation Modeling* (PLS-SEM) with the help of software *SmartPLS* version 4.0. The analysis is carried out through two stages, namely testing *Outer model* to assess the validity and reliability of research and testing constructs *Inner model* to test the structural relationships between latent variables in the research model (Hair et al., 2021).

RESULTS AND DISCUSSION

The distribution of the questionnaire conducted online has succeeded in gathering 118 respondents. All respondents participated voluntarily and they were employees of several hospitals in the city of Bandung who were active in the use of *SIMRS*. In general, the characteristics of the respondent are presented in Table 1.

Table 1. Characteristics of respondents

Characteristics	Remarks	Frequency	Percentage
Gender	Male	22	18,6%
	Women	96	81,4%
Age	> 20-25 years old	42	35,6%
	> 25-30 years old	36	30,5%
	> 30-35 years old	24	20,3%
	> 35-40 years old	6	5,1%
	> 40 years old	10	8,5%

Characteristics	Remarks	Frequency	Percentage
Long Time Working	> 1-5 years	87	73,7%
	> 6-10 years	20	16,9%
	> 11-15 years old	11	9,3%
***SIMRS* Usage Intensity**	Very Rare	9	7,6%
	Rare	7	5,9%
	Frequent	44	37,3%
	Very Frequent (almost every hour)	58	49,2%
***SIMRS* training that has been attended**	Never	53	44,9%
	< 3 times	38	32,2%
	> 3 times	27	22,9%

Source: data processing (2026)

Based on the data presented in table 1, it can be concluded that in general, the respondents in this study are dominated by women (81.4%) with the majority age group in the range of 20-25 years (35.6%) which shows that most *SIMRS* users are of productive working age. In terms of length of work, most respondents have a working period of 1-5 years (73.7%), which shows that the majority of *SIMRS* users are generally still in the early phase of their working period. Respondents reported that the use of *SIMRS* was very frequent or almost hourly (49.2%), indicating that the system was used regularly in daily operational activities. Meanwhile, based on training experience, the majority of respondents had never participated in *SIMRS* training (44.9%), even though the system was used intensively in hospital operational activities.

Evaluation of the Outer Model

Convergent Validity Test

Convergent validity analysis is performed to ensure that each indicator has a strong correlation with other indicators in the same construct. This validity indicates that the indicator is able to explain the measured construct consistently. Convergent evaluation is carried out through the *Outer Loading* and *Average Variance Extracted*/*AVE* (Wiguna, 2022). Value *Outer Loading* reflects the strength of the relationship between the indicator and its construct, where a value of ≥0.50 indicates that the indicator has an adequate contribution in reflecting the constructed being measured. Meanwhile, the value of *AVE* Describes the extent to which the indicator is able to represent latent constructs, with the eligibility criteria if the value is ≥ 0.50. The higher the value *AVE*, the better the indicator's ability to explain the measured construct (Wiguna, 2022). There are several indicators that must be removed because they do not meet the criteria for convergent validity, namely seven indicators on the digital readiness variable. Once these indicators are removed, the results show that all remaining indicators have a value *Outer Loading* ≥0.50, as well as a value of *AVE* on the entire construct has exceeded the required minimum limit. This explains that this study has used the right measuring tool in measuring the variables studied. The overall results of convergent validity are presented in Table 2.

Table 2. Convergent validity testing with *outer loading* and AVE values

Variable	Indicator	Outer Loadings	AVE	Results
System Quality	**KS.1**	0.835	0.697	Valid
	KS.2	0.792		
	KS.2	0.876		
Quality of Information	**TO.1**	0.886	0.806	Valid
	FIG.2	0.894		
	FIG.3	0.913		
Quality of Service	**KL.1**	0.898	0.767	Valid
	KL.2	0.891		
	KL.3	0.838		
System Users	**PS.1**	0.921	0.843	Valid
	PS.2	0.916		
System Satisfaction	**KP.1**	0.909	0.860	Valid
	KP.2	0.919		
	KP.3	0.961		
	KP.4	0.919		
Net benefit	**NB.1**	0.766	0.679	Valid
	NB.2	0.857		
	NB.3	0.862		
	NB.4	0.804		
	NB.5	0.812		
	NB.6	0.807		
	NB.7	0.857		
	NB.8	0.822		
Digital Readiness	**DR.1**	0.759	0.511	Valid
	DR.2	0.829		
	DR.3	0.785		
	DR.4	0.778		
	DR.5	0.671		
	DR.6	0.731		
	DR.7	0.726		
	DR.8	0.543		
	DR.9	0.553		

Source: data processing (2026)

Discriminating Validity Test

Discriminant validity aims to ensure that each construct in the research model is completely empirically different and does not measure the same concept. The evaluation of the validity of the discriminant in this study was carried out using the *Cross Loading* (Hair et al., 2021). Through the *Cross Loading*, each indicator is expected to have a value *Loading* highest in the construct it measures compared to other constructs. The condition shows that the indicator has a discriminating ability to represent its original construct. Based on testing *cross-loadings* (Table 3), the whole indicator shows *Loading* highest in their respective constructs and do not overlap with other constructs. Analysis results *Cross-loading* presented in Table 3.

Table 3. Discriminant validity testing: *Cross-Loading*

	P.S.	CD	KS	TO	KL	NB	DR
PS.1	0.921	0.695	0.709	0.698	0.599	0.666	0.610
PS.2	0.916	0.632	0.605	0.605	0.534	0.681	0.646
KP.1	0.706	0.909	0.750	0.752	0.755	0.778	0.779
KP.2	0.625	0.919	0.665	0.733	0.749	0.773	0.749
KP.3	0.681	0.961	0.748	0.803	0.765	0.809	0.772
KP.4	0.669	0.919	0.698	0.763	0.772	0.743	0.722
KS.1	0.598	0.573	0.835	0.642	0.531	0.623	0.616
KS.2	0.491	0.574	0.792	0.601	0.616	0.614	0.513
KS.3	0.683	0.761	0.876	0.777	0.725	0.689	0.644
TO.1	0.606	0.738	0.701	0.886	0.745	0.715	0.631
FIG.2	0.621	0.723	0.718	0.894	0.704	0.705	0.604
FIG.3	0.683	0.755	0.774	0.913	0.723	0.705	0.644
KL.1	0.483	0.705	0.653	0.683	0.898	0.716	0.671
KL.2	0.575	0.704	0.615	0.724	0.891	0.749	0.643
KL.3	0.558	0.742	0.707	0.707	0.838	0.666	0.653
NB.1	0.617	0.691	0.698	0.697	0.608	0.766	0.557
NB.2	0.616	0.716	0.719	0.731	0.718	0.857	0.689
NB.3	0.610	0.722	0.654	0.686	0.658	0.862	0.712
NB.4	0.555	0.668	0.653	0.578	0.659	0.804	0.710
NB.5	0.555	0.615	0.501	0.531	0.580	0.812	0.632
NB.6	0.567	0.668	0.581	0.618	0.699	0.807	0.733
NB.7	0.671	0.690	0.618	0.644	0.678	0.857	0.699
NB.8	0.630	0.735	0.637	0.689	0.737	0.822	0.707
DR.1	0.637	0.605	0.547	0.580	0.590	0.635	0.759
DR.2	0.251	0.445	0.328	0.345	0.336	0.382	0.543
DR.3	0.324	0.399	0.284	0.236	0.294	0.409	0.553
DR.4	0.621	0.704	0.550	0.623	0.652	0.755	0.829
DR.5	0.572	0.645	0.479	0.558	0.563	0.658	0.785
DR.6	0.626	0.694	0.616	0.651	0.657	0.751	0.778
DR.7	0.385	0.543	0.553	0.449	0.514	0.480	0.671
DR.8	0.374	0.539	0.571	0.426	0.544	0.549	0.731
DR.9	0.422	0.580	0.579	0.460	0.540	0.542	0.726

Source: data processing (2026)

Reliability Test

The reliability of the construct is assessed based on the value *Cronbach's alpha* and *Composite reliability* on each construct. The construct is declared to have adequate reliability if the value *Cronbach's alpha* and *Composite reliability* > 0.7 (Wiguna, 2022). Based on Table 4, the entire construct is said to be reliable because *Cronbach's Alpha* > 0.70 and *Composite Reliability* > 0.70, as per the standards of Hair et al. (2017, 2022). This means that all questions in each construct measure the same concept and the respondents' answers are consistent between question items.

Tabel 4. Reliability testing

	Cronbach's alpha	Composite reliability (rho_a)	Results
KS	0.785	0.805	Reliable
TO	0.880	0.881	Reliable
KL	0.848	0.848	Reliable

	Cronbach's alpha	Composite reliability (rho_a)	Results
P.S.	0.814	0.815	Reliable
CD	0.945	0.946	Reliable
NB	0.932	0.933	Reliable
DR	0.879	0.896	Reliable

Source: data processing (2026)

Inner Model Evaluation

After the measurement model (outer model) is carried out and all constructs are declared to meet the criteria of validity and reliability, the next stage is to evaluate the structural model (inner model). The internal evaluation of the model aims to test the causal relationship between latent constructs and assess the predictive ability of the model in explaining endogenous variables. The results of the model test are presented in figure 2.

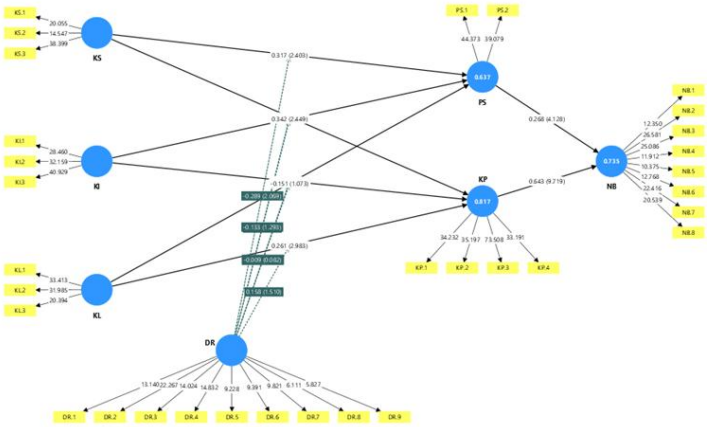

Figure 2. Inner Schema of the research model
Source: SmartPLS Output Results, Primary Data Processed (2026)

Analysis R^2

Coefficient of determination (*R2*) is used to assess the ability of structural models to explain variations in endogenous variables. Higher R2 values reflect the model's improved explanatory ability. In the PLS-SEM approach, the R2 value of 0.75 is categorized as strong, 0.50 moderate, and 0.25 weak (Hair et al., 2021). The results of the determination coefficient (R2) analysis are presented in table 5, which shows that PS has an R2 value of 0.614 (moderate), KP of 0.817 (strong), and DR of 0.735 (strong). Value *adjusted R2* all endogenous variables show patterns consistent with R2 values, so it can be concluded that the constructed structural model has an adequate level of accuracy and predictive ability.

Table 5. Analysis of the determination coefficient (R^2)

	R-square	R-square adjusted
P.S.	0.637	0.614
CD	0.817	0.805
DR	0.735	0.731

Note: PS = System User, KP = User Satisfaction DR = Digal Readiness
Source: data processing (2026)

Indirect Effect Hypothesis Test

Hypothesis testing (indirect influence) refers to relationship paths in structural models that involve a series of relationships through one or more intermediate constructs (Hair Jr et al., 2021). In this study, there are six hypotheses that have indirect influences. The results of hypothesis testing with indirect pathways are presented in table 6.

Table 6. Indirect effect test results

	Original sample (O)	T statistics	P values	Results
KS → PS → NB	0.085	1.988	0.047	H1a Accepted
KS → KP → NB	0.037	0.718	0.473	H1b Rejected
KI → PS → NB	0.092	2.109	0.035	H2a Accepted
KI → KP → NB	0.196	3.268	0.001	H2b Accepted
KL → PS → NB	-0.041	1.011	0.312	H3A Rejected
KL → KP → NB	0.168	2.777	0.006	H3b Accepted

Note: KS = System Quality, KI = KL Information Quality = Service Quality, PS = System Users, KP = User Satisfaction DR = Digal Readiness

Source: data processing (2026)

The results of the indirect effect test showed that the role of the mediation variable in the research model has not been fully proven to be significant. Based on the results of the analysis, there are two insignificant hypotheses, namely KS to NB through KP as mediation (t-statistic 0.718 and p-value = 0.473) and also KL to NB through PS as mediation (t-statistic 1.011 and p-value = 0.312). These findings indicate that the role of mediating variables in these pathways has not been able to effectively bridge the influence of independent variables on NB. Meanwhile, four other hypotheses showed a statistically significant influence, namely KS was proven to have an effect on NB through PS as a mediator with a t-statistic of 1.988 and p-value = 0.047. In addition, KI was proven to have an effect on NB through PS as a mediation (t-statistic 2.109 and p-value = 0.035) or through KP as a mediation (t-statistic 3.268 and p-value = 0.001), and the KL variable was proven to have an effect on NB through KP as a mediator with t-statistic 2.777 and p-value = 0.006.

Moderating Effect *Hypothesis Test*

The model in this study has six hypotheses that involve digital readiness testing as moderation. The results of the *moderating effect hypothesis test* are presented in table 7. The results of the analysis showed that digital readiness (DR) only played a role as a moderation in the relationship between system quality (KS) and information quality (KI) for system users (PS) as shown by t-statistical values >1.96 and p-values < 0.05 (H4a and H5a). Meanwhile, the role of digital readiness (DR) in the relationship between system quality (KS) and information quality (KI) to user satisfaction (KP), as well as in the relationship between service quality (KL) to system users (PS) and to user satisfaction (KP) is not a significant moderation variable so that the H4b, H5b, H6a, and H6b hypotheses are rejected.

Table 7. Moderating effect test results

	Original sample (O)	T statistics	P values	Results
DR x KS → PS	-0.289	2.069	0.039	H4A Accepted
DR x KS → KP	-0.133	1.293	0.196	H4b Rejected
DR x KI → PS	0.451	2.677	0.007	H5A Accepted
DR x KI → KP	-0.009	0.082	0.935	H5b Rejected
DR x KL → PS	-0.183	1.354	0.176	H6a Rejected
DR x KL → KP	0.158	1.510	0.131	H6bRejected

Note: KS = System Quality, KI = KL Information Quality = Service Quality, PS = System Users, KP = User Satisfaction DR = Digal Readiness

Source: data processing (2026)

Based on the results of hypothesis testing with PLS, it can be concluded that out of the 12 hypotheses proposed, there are six hypotheses that are accepted. This can be seen in table 8.

Table 8. Hypothesis conclusion

	Hypothesis	Conclusion
H1a	The quality of the system has a significant effect on *the net benefit* through the user as a mediator	Accepted
H1b	The quality of the system has a significant effect on *the net benefit* through user satisfaction as a mediation	Rejected
H2a	The quality of information has a significant effect on *the net benefit* through the user as a mediator	Accepted
H2b	The quality of information has a significant effect on *the net benefit* through user satisfaction as a mediation	Accepted
H3a	The quality of service has a significant effect on *the net benefit* through users as mediation	Rejected
H3b	The quality of service has a significant effect on *the net benefit* through user satisfaction as a mediation	Accepted
H4a	*Digital readiness* moderates the influence of system quality on *SIMRS* users.	Accepted
H4b	*Digital readiness* moderates the effect of system quality on *SIMRS* user satisfaction.	Rejected
H5a	*Digital readiness* moderates the influence of information quality on *SIMRS* users.	Accepted
H5b	*Digital readiness* moderates the influence of information quality on *SIMRS* user satisfaction.	Rejected
H6a	*Digital readiness* moderates the influence of service quality on *SIMRS* users.	Rejected
H6b	*Digital readiness* moderates the effect of service quality on *SIMRS* user satisfaction.	Rejected

Source: data processing (2026)

The Effect of System Quality on *Net Benefits* through System Users and User Satisfaction

The results of the study show that the quality of the system contributes to the *Net Benefit* through the user of the system, but not through user satisfaction. These findings

indicate that the aspects of ease of use, response speed, clarity of view, and stability of *SIMRS* play a greater role in ensuring that the system is used consistently than in shaping the user's affective evaluation of the system (Permana et al., 2023; Zheng et al., 2023)

These findings are in line with Ira et al. (2023) and Nurcahyani & Sugiarsi (2024) which states that if an organization is increasingly digital by requiring the majority of its business processes in the system, then the quality of the system becomes the main determining factor in the intensity and effectiveness of use. Meanwhile, user satisfaction is more influenced by other dimensions such as information quality and system service experience. On the other hand, the respondents in this study came from hospitals that had used *SIMRS* as their basic operational needs. Thus, improving the quality of the system is not always followed by improved user satisfaction because employees have become so accustomed to the existing system that technical improvements may no longer be something special (Alshehri & Hadoussa, 2025; Jad & Zainol, 2025)

The Effect of Information Quality on *Net Benefits* through System Users and User Satisfaction

This study shows that information quality is the most consistent factor in producing *Net Benefit*, both through system users and user satisfaction. Accurate, complete, well-organized, and updated information *real-time* encourage optimal use of *SIMRS* and form user satisfaction because the system is considered to be able to support real work needs (Jad & Zainol, 2025; Zheng et al., 2023).

In this study, the majority of respondents were of productive age and had worked for at least 1-5 years in a hospital. This shows that respondents have a mature understanding and experience related to hospital operations and the use of *SIMRS*, so that their perception of system quality is more representative of the reality of health technology implementation in the field. Information quality not only drives high intensity of system usage but also strengthens user satisfaction as an important pathway in generating the net benefits of *SIMRS*. These results reinforce the findings Zheng et al., (2023), Jad & Zainol, (2025), and Alshehri & Hadoussa, (2025) which places information quality as the dominant factor in the success of health information systems.

The Effect of Service Quality on *Net Benefits* through System Users and User Satisfaction

This study found the role of service quality in *Net Benefit* through user satisfaction, but not through system users. These findings show that service aspects such as technical support, management team responsiveness, and assistance in the use of *SIMRS* play a greater role in shaping user comfort and satisfaction than in encouraging an increase in the intensity of system usage (Permana et al., 2023). This condition can be explained because the intensity of system use is optimal (due to mandatory operational needs), so that service quality is more dominant in shaping emotional satisfaction than the frequency of technical use (Alshehri & Hadoussa, 2025; Jad & Zainol, 2025).

Empirically, these findings confirm that service quality serves as a driver of user experience and psychological-organizational factors in the utilization of *SIMRS*, rather than as the main driver of usage behavior. The results of this study are in line with Permana et al. (2023) and Resa Agustian et al. (2025)**,** and supported by Ira et al. (2023) which states that the quality of information technology services in the health sector has a significant impact on user satisfaction compared to the frequency or intensity of system use.

The Role *of Digital Readiness* in the Relationship between System Quality to System Users and *SIMRS* User Satisfaction

The results of the study show that digital readiness moderates the influence of system quality on *SIMRS* users, but does not moderate the influence of system quality on user satisfaction. These findings indicate that individual digital readiness strengthens the user's ability to utilize the technical aspects of the system, such as ease of use, response speed, and system stability, thereby impacting the intensity and effectiveness of *SIMRS* users. Users with a better level of digital readiness tend to be more adaptive to system features and are able to optimize system functions in support of daily work activities (Alotaibi et al., 2025; Bober et al., 2024).

This condition is relevant to the characteristics of the study respondents which are dominated by the productive age group of 20-25 years and the working period of 1-5 years. This group of respondents is a group of people who are fluent in technology and are more open to the use of information technology. Therefore, digital readiness plays a role as a reinforcing factor in optimizing system quality for *SIMRS* usage behavior. In addition, the high intensity of *SIMRS* use, where most respondents use the system very frequently (almost every hour) indicates that the quality of the system supported by adequate digital readiness directly drives the effectiveness of the use of the system in hospital operational activities.

Nevertheless, digital readiness does not strengthen the relationship between system quality and user satisfaction. This shows that even though users have good digital readiness and are able to make optimal use of the system, user satisfaction is more influenced by the perception of the end benefit and the overall user experience. Employee (user) satisfaction in the context of a hospital that has embedded *SIMRS* in its business processes, is no longer entirely determined by the individual's ability to use the system, but rather the extent to which the system becomes a resource that optimizes work. These findings are in line with Alshehri & Hadoussa, (2025) and Nurcahyani & Sugiarsi, (2024) which emphasizes that in mandatory information systems, the quality of the system has more influence on usage than user satisfaction.

The Role of Digital Readiness in the Relationship between Information Quality to System Users and *SIMRS* User Satisfaction

The results of the study show that digital readiness moderates the influence of information quality on *SIMRS* users, but does not moderate the influence of information quality on user satisfaction. These findings suggest that digital readiness strengthens users' ability to access, interpret, and utilize the information generated by *SIMRS* to support the execution of clinical and administrative tasks and decision-making. Users with higher digital readiness tend to be able to integrate data and make more optimal use of information in their daily work activities (Bober et al., 2024; Michelotto & Joia, 2024).

These findings are consistent with the characteristics of respondents who show a high level of intensity of *SIMRS* use, although most respondents have never participated in formal *SIMRS* training. This condition indicates that an individual's digital readiness functions as personal capital that allows users to remain able to utilize the quality of system information effectively through a direct user experience. Thus, digital readiness plays a role as a reinforcement of the relationship between information quality and *SIMRS* usage behavior, especially in a work environment that demands the use of information quickly and sustainably.

In contrast, the influence of information quality on user satisfaction is not moderated by the level of digital readiness. This shows that user satisfaction with *SIMRS* information is more determined by the characteristics of the information itself such as accuracy, completeness, and relevance which are perceived to be relatively the same by users with different levels of digital readiness. These findings are consistent with Jad & Zainol, (2025) and Zheng et al., (2023) which states that the quality of information is a direct determinant of user satisfaction in a health information system, regardless of differences in individual user characteristics.

The Role of Digital Readiness in the Relationship between Service Quality to System Users and *SIMRS* User Satisfaction

The results of the study show that digital readiness does not moderate the influence of service quality on users and *SIMRS* user satisfaction. These findings show that the quality of services, such as technical support, training, and system manager responsiveness, is perceived as an organizational factor whose impact is felt collectively by all users, without being influenced by variations in individual digital readiness (Pane et al., 2023; Permana et al., 2023).

This condition is reinforced by the characteristics of respondents who show that most users have never participated in *SIMRS* training, but still use the system intensively. This indicates that *SIMRS* services are more standardized and applied evenly in the hospital environment, so that the benefits of the service are felt relatively equally by all users. In this context, an individual's digital readiness does not serve as a differentiating factor that strengthens or weakens the influence of service quality on user usage or satisfaction (Nurcahyani & Sugiarsi, 2024).

These findings are in line with Pane et al., (2023), Permana et al., (2023), and Agustian et al., (2025) which confirms that the quality of *SIMRS* services is determined more by organizational policies, managerial support, and institutional support systems than individual user factors. Therefore, digital readiness does not play a role as a moderation variable in the relationship between service quality and *SIMRS* user outcomes.

CONCLUSION

The results of the study show that the successful implementation of the hospital management information system (*SIMRS*) is influenced by the quality of the system, the quality of information and the quality of services through different mechanisms. System quality affects the *net benefit* through system users, but not through user satisfaction, which shows that the technical aspects of the system play a greater role in supporting operational utilization than shaping user satisfaction. Information quality has been proven to have the most consistent influence on *net benefits*, both through system users and user satisfaction. Accurate, relevant, and easily accessible information drives optimal use of *SIMRS* while increasing user satisfaction. In contrast, service quality only affects *benefits* through user satisfaction, while the effect through system users is insignificant, indicating that services play more role in shaping user experience than system utilization intensity. In addition, digital readiness strengthens the influence of system quality and information quality on the use of *SIMRS*, but does not moderate user satisfaction. These findings confirm that digital readiness serves as a reinforcement of the technical utilization of the system, not as a major factor in the

affective evaluation of users. Overall, improving information quality, system reliability, and effective service support are key in optimizing the benefits of *SIMRS* in hospitals.

The managerial implications of these findings emphasize that hospital management needs to prioritize improving the quality of information and the reliability of the *SIMRS* system, as these two aspects have been shown to contribute the greatest to the benefits of the system. The provision of accurate information and a stable system is key in supporting operational performance, while service quality plays an important role in building user satisfaction. Strengthening knowledge of employee digital literacy should be done in a structured manner so that employees have enough knowledge and expertise to follow the demands of change in the organization.

This study has limitations in cross-sectional design, limited research scope and the use of data based on respondent perception. The next research is recommended to use a longitudinal approach, expand the research object, and develop a model by incorporating organizational factors and more contextual digital readiness measurements.

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