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The Role of Visual Design Content Quality, and System Users in Improving the Net Benefits of Electronic Medical Records in Hospital X

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ABSTRACT. *The implementation of Electronic Medical Records (RME) in hospitals often faces various obstacles that hinder the achievement of maximum benefits. The main problems lie in the visual design, content quality, and user acceptance of the system, which have an impact on the work efficiency of medical personnel and the quality of service to patients. This study aims to analyze the effect of visual design and content quality of RME on Net benefits by considering system users as intervening variables. This research approach uses the HOT-Fit model that integrates human, organizational, and technological dimensions, accompanied by EUCS theory to assess visual and content quality and UTAUT theory to understand user perceptions. The results showed that the dimensions of visual design and content quality had a significant influence on the Net benefits of RME, both directly and through intervening system user variables. The findings also revealed that weaknesses in menu structure and information relevance hindered system performance, although overall, the Net benefits of RME were in the high category. Therefore, continuous evaluation and improvement on visual aspects, such as a more intuitive layout, as well as more organized and relevant content, are priorities for improving RME implementation. Key suggestions include optimizing the menu structure, simplifying navigation, integrating the system across hospital units, and providing ongoing training for system users. Thus, this study contributes to the development of a more effective RME implementation strategy, so as to support digital transformation in the healthcare sector.*

Keywords: *Electronic Medical Records, Visual Design, Content Quality, System Users, Net Benefits*

1. INTRODUCTION

Hospitals as institutions that provide comprehensive individual health services through promotive, preventive, curative, rehabilitative, and/or palliative health services by providing inpatient, outpatient, and emergency services (Health Law No. 17 of 2023), in their business processes must record all actions to patients documented in the Hospital Management Information System (SIRS) (Minister of Health Regulation Number 82, 2013). The existence of the Minister of Health Regulation (Permenkes) Number 24 of 2022 concerning Medical Records requires every Hospital (RS) to organize Electronic Medical Records (EMR). EMR contains records of all service activities provided to patients, created using an electronic system whose purpose is to benefit the implementation of medical records. EMR must be implemented by the hospital no later than December 31, 2023.

Hospital X has implemented Electronic Medical Records (EMR) in the Outpatient Installation since 2021, but in the implementation of Electronic Medical Records there are obstacles both from users in using the EMR system, this makes the implementation of EMR still not optimal so that its usefulness is not in accordance with user expectations.

In the initial survey of 10 direct users of EMR, it was found that 60% of users felt that EMR was still less useful because it did not speed up the performance of patient services.

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50% of users felt that users did not have good skills in using EMR so that users felt that documenting medical information in EMR took longer.

60% of users felt that the EMR layout was less attractive and the layout was difficult to understand. Users spent more time understanding the layout and navigation of EMR, which resulted in longer patient service times.

60% of users felt that EMR did not provide information that was in accordance with service needs. EMR content is still not integrated with other information system content used by the Hospital, making it difficult for users to access patient information according to patient service needs. The implementation of Electronic Medical Records (EMR) in hospitals has been required by regulations such as Permenkes Number 24 of 2022, the implementation of this technology faces various challenges that hinder its usefulness. Previous studies have focused more on the technical and infrastructure aspects of EMR, while studies that integrate the influence of visual design, content quality, and user perceptions of net benefits are still very limited. This gap is important to fill because user perception and acceptance greatly determine the success of EMR implementation in the field. This study can provide a more comprehensive solution to improve the effectiveness of EMR. In addition, this study supports hospitals in national efforts to improve the quality of health services through digital transformation. The synergistic relationship between visuals, content, and system users is the basis for the success of optimal EMR implementation. Ahmed et al. (2011) showed that the combination of intuitive visuals and relevant content facilitates clinical decision making. Reyes et al. (2023) found that simple visual navigation, combined with quality content, can improve user work efficiency. According to Doll and Torkzadeh (1991), visual elements such as color, layout, and clarity of design help users understand and use the system more efficiently and complete, relevant, and accurate content provides a strong basis for users to make informed decisions.

The interaction between content and visuals for system users is very dependent on the relevance and clarity of the information presented. Venkatesh et al. (2003) shows that perceptions of usefulness and convenience have a major influence on technology adoption by users. Yusof et al. (2008) noted that user satisfaction is the result of interaction between users and the system, which is an important indicator of the success of technology implementation and interaction between technology and users is a key factor in achieving net benefits from system implementation. Reyes et al. (2023) highlight that intuitive and easy-to-use systems enable users to work more efficiently, thereby increasing productivity.

2. RESEARCH METHODS

This study uses a quantitative research method with the type of research being explanatory causality. The data collection method is a survey, the researcher selects a number of respondents as samples and asks a list of questions. The location of the study was at the Outpatient Installation at Hospital X for a period of 1 month, namely December 2024.

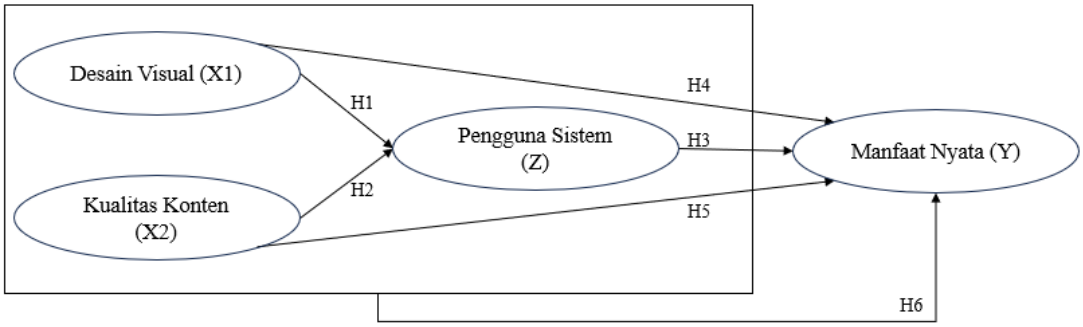

Figure 1. Research Constellation

The population in this study were 198 employees of the Hospital operating RME in the Outpatient Installation, namely Specialist Doctors, General Practitioners, Nurses, Midwives, Pharmacists, Pharmaceutical Technical Personnel, Health Analysts and Radiographers. The sample consisted of 120 respondents. Determination of the number of samples refers to the number of question items x 5 so that the minimum number of respondents is obtained (Hair et all, 2010) and added 10% of the sample for the risk of dropping out during the study. According to (Sastroasmoro & Ismael, 1995) the drop out criteria are respondents who are not directly involved in the research respondents, but are direct users of RME who are included in the population count. The sampling technique used Purposive sampling with sample criteria being direct users of RME in the outpatient installation and at least 18 years old. The data in this study were collected through a questionnaire consisting of 24 question items divided into four variables, namely Visual Design, Content Quality, System Users, and Net benefits. The research questionnaire was prepared by submitting closed statements and answer choices to be submitted to the research sample with a Likert scale interval of 1-4. The questionnaire contains questions about the characteristics of respondents including gender, age, education, length of service, and length of use of RME. In this study, the validity test used the reliability testing of the instrument processed using the AMOS software program. In the validity test, a variable is declared valid and can be analyzed further if the Indicator is said to be valid if it has a Loading Factor (SLF) > 0.5 totaling 45 samples, while the Reliability test is said to be reliable if the construct of reliability value is > 0.7 (Ghozali, 2014); (Ghozali, 2011). obtained as follows:

Table 1. Reliability Test Results

Variables	*Composite Reliability*	Description
System User (Z)	0,980	Reliable
Visual Design (X1)	0,979	Reliable
Variables	***Composite Reliability***	**Description**
Content Quality (X2)	0,976	Reliable
Net benefits (Y)	0,957	Reliable

Based on Table 1. The reliability test results obtained that each variable has a *composite reliability* value above 0.70, therefore, it can be interpreted that the instrument for each variable is reliable, this means that the instrument used has consistency as a measuring tool.

Then after the questions were declared valid and reliable, the researchers conducted sampling using descriptive data analysis techniques using the *Three Box Method* which divided the question score items into low, medium and high and hypothesis testing techniques through SEM.

3. RESULTS AND DISCUSSIONS

Results

The number of respondents based on gender was found to be mostly female, namely 97 employees or 72.4%, while male respondents were 37 employees or 27.6%. This shows that female employees are the most employees in using and operating Electronic Medical Records.

The number of respondents based on age obtained the most is the age of 25-35 years, namely 88 employees or 65.4%, then less than 25 years, namely 22 employees or 16.4%, 36-45 years as many as 22 employees or 16.4%, and 46-55 years as many as 2 employees or 1.5%. The number of respondents based on age, obtained at the age of more than 55 years showed the least frequency, namely 0 people or 0%. This shows that employees who use and operate Electronic Medical Records are employees of productive age.

The number of respondents based on education obtained the most is the S1 level, namely 62 employees or 46.3%, then at the D3 level, namely 50 employees or 37.3%, then at the D4 level, namely 16 employees or 11.9% and S2 level, namely 6 employees or 4.5%. This shows that employees who use and operate Electronic Medical Records are employees with an S1 education level and then D3 education.

The number of respondents based on the type of personnel obtained was mostly nurses, namely 66 employees or 49.3%, while specialist doctor respondents were 15 employees or 11.2%, general practitioners were 17 employees or 12.7%, midwives were 12 employees or

9.0%, pharmacists were 3 employees or 2.2%, pharmaceutical technical personnel were 10 employees or 7.5%, health analysts were 6 employees or 4.5%, and radiographers were 5 employees or 3.7%. This shows that the number of respondents who use Electronic Medical Records is dominated by nurses, general practitioners and specialists.

The number of respondents based on the length of service obtained was mostly 1 - 3 years, namely 89 employees or 66.4%, while respondents with a tenure of less than 1 year were 45 employees or 33.6%. This shows that employees who use and operate Electronic Medical Records are mostly employees who have worked for a long time at Hospital.

The number of respondents based on the length of use of RME obtained the most 1 - 3 years as many as 89 or 66.4%%, while those using less than 1 year were 45 employees or 33.6%. This shows that employees generally use Electronic Medical Records for a long time.

Table 2. Three-box Method Matrix

Variables	Score			Behavior
	Low	Medium	High	
Visual Design (X1)			√	Interesting
Content Quality (X2)			√	Quality
System User (Z)			√	Receive
Net Benefits *(Y)*			√	Helpful

The average index score of the research variables >70% indicates a positive perception or evaluation of the Electronic Medical Record (RME). Based on the three box method, the score is in the high category, indicating an attractive RME visual design, quality RME content quality makes users accept the RME system which is considered easy to learn and use so that using RME helps RME users work more effectively in patient care.

Structural model analysis is conducted to analyze and determine the relationship between latent variables tested. The following are the results of the tests that have been carried out:

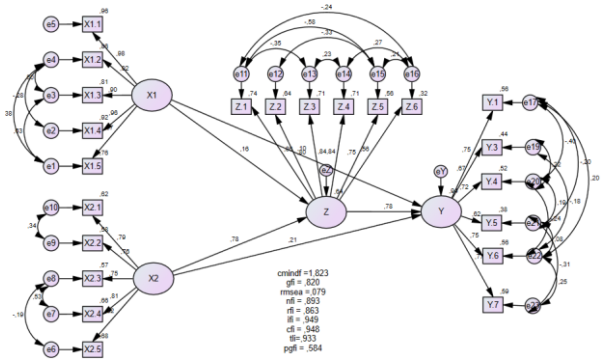

Figure 2. Path Diagram Structural Model

Partial Test

The partial hypothesis test (t test) is used to measure the direction and significance of the direct relationship between endogenous and exogenous variables. With a significance level of 5%, the relationship is considered significant if the probability value <0.05 (Hair et al, 2010). The following are the results of this research hypothesis test.

Table 3.Recapitulation of Direct Effect Testing

Variables	Coefficient	P	Description
X1 --> Z	0,157	0,011	H_1= Accepted
X2 --> Z	0,781	0,000	H_2= Accepted
Z --> Y	0,781	0,000	H_3= Accepted
X1 --> Y	0,100	0,022	H_4= Accepted
X2 --> Y	0,208	0,016	H_5= Accepted

1. The effect of visual design on system users resulted in a *p value of* 0.011. The test results show that the *p value* is smaller than 0.05. This shows that there is a significant influence of visual design on system users. The effect of visual design on system users produces a coefficient of 0.157, indicating a positive influence so that the higher the quality of RME visual design, the higher the user acceptance and vice versa. Thus, **H1 is accepted.**
2. The effect of content quality on system users results in a *p value of* 0.000. The test results show that the *p value* is smaller than 0.05. This shows that there is a significant effect of content quality on system users. The effect of content quality on system users produces a coefficient of 0.781, indicating a positive influence so that the higher the quality of RME content, the higher the user acceptance and vice versa Thus, **H2 is accepted.**
3. The effect of system users on Net benefits resulted in a *p value of* 0.000. The test results show that the *p value* is smaller than 0.05. This means that there is a significant effect of system users on Net benefits. The effect of system users on Net benefits produces a coefficient of 0.781, indicating a positive effect so that the higher the RME system users, the higher the Net benefits and vice versa. Thus, **H3 is accepted.**
4. The effect of visual design on Net benefits resulted in a *p value of* 0.022. The test results show that the *p value* is smaller than 0.05. This means that there is a significant effect of visual design on Net benefits. The effect of visual design on Net benefits produces a coefficient 0.100 indicating a positive influence so that the higher the visual design of RME, the higher the Net benefits and vice versa. Thus, **H4 is accepted.**

5. The effect of content quality on Net benefits results in a *p value of* 0.016. The test results show that the *p value* is smaller than 0.05. This means that there is a significant effect of content quality on Net benefits. The effect of content quality on Net benefits produces a coefficient of 0.208, indicating a positive effect so that the higher the quality of RME content, the higher the Net benefits and vice versa. Thus, **H5 is accepted.**

Simultaneous Test

In Hair et al. (2010), a simultaneous test using F statistics was conducted to test the overall model in SEM and the relationship between variables in the model. The simultaneous test shows that the variables of visual design, content quality, and system users together have a significant effect on the Net benefits of RME, with an R^2 value of 94%. The calculation results in a value of Fcount = 505.25, which is greater than Ftable = 2.674, thus stating the simultaneous influence of the three variables on the Net benefits of RME is accepted. **H6 is accepted**

Table 4.Recapitulation of Direct Effect Testing

Variables	F table	F count	Description
X1, X2, Z-->Y	2.68	679.47	H_6= Accepted

Intervening Test

The partial hypothesis test (t test) is used to measure the direction and significance of the direct relationship between endogenous and exogenous variables. With a significance level of 5%, the relationship is considered significant if the probability value <0.05 (Hair et al, 2018). The following are the results of this research hypothesis test.

Table 5. Recapitulation of Intervening Effect Testing

Variables	Coefficient	P	Description
X1 --> Z --> Y	0,123	0,027	H_7= Accepted
X2 --> Z --> Y	0,610	0,010	H_8= Accepted

1) Testing the hypothesis of the effect of visual design on Net benefits through intervening system users, the AMOS output results show a *p-value* of 0.027 <0.05. Therefore, it can be interpreted that there is a significant effect of visual design on Net benefits through *intervening* system users. Thus, **H7 is accepted**
2) Testing the hypothesis of the effect of system content quality on Net benefits through intervening system users, the AMOS output results show a *p-value* of 0.010 <0.05.

Therefore, it can be interpreted that there is a significant effect of content on Net benefits through *intervening* system users. Thus, **H8 is accepted**

Coefficient of Determination

The coefficient of determination (R^2) measures the effect of the independent variable on the dependent variable in the regression model, with values ranging from 0 to 1. A value of $R^2 = 0$ means that the independent variable does not explain the variation in the dependent variable, while $R^2 = 1$ indicates that the model can explain 100% of the variation. The higher the R^2 value, the better the model explains the dependent variable. Conversely, a low R^2 value indicates a limited contribution of the independent variable (Hair et al, 2018). The following is the result of the coefficient of determination:

Table 6. Recapitulation of the Coefficient of Determination

Variables	Coefficient of Determination
System User (Z)	0,635
Net benefits (Y)	0,940

1) System users with a coefficient of determination of 0.635 so that it can be interpreted that visual design and content quality are able to influence system users by 63.5%.
2) Net benefits with a coefficient of determination of 0.940 so that it can be interpreted that visual design, content quality and system users are able to influence Net benefits by 94%.

Table 7. Hypothesis Recapitulation Results

No.	Hypothesis	Description
1	Visual Design Affects System Users	H_1= Accepted
2	Content Quality Affects System Users	H_2= Accepted
3	System Users Affect Net Benefits	H_3= Accepted
4	Visual Design Affects Net Benefits	H_4= Accepted
5	Content Quality Affects Net Benefits	H_5= Accepted
6	Visual Design, Content Quality and System Users Simultaneously Affect Net Benefits	H_6= Accepted
7	Visual Design Affects Net Benefits With System Users as Intervening Variables	H_7= Accepted
8	Content Quality Affects Net Benefits With System Users as Intervening Variables	H_8= Accepted

4. DISCUSSION

Visual Design Affects System Users

Based on the results of data analysis in this study, there is a significant influence of RME visual design on system users, so that with RME visual design that is easy to read will make

the RME system more accepted by RME users. Referring to the results of the *three box method* analysis, *the* quality of RME visual design contributes directly to RME system users. Easy-to-understand visual quality makes it easier for RME users to access and document patient medical information. This directly reduces the time needed for administrative processes and increases the productivity of medical personnel. An attractive and easy-to-use visual design will help users to adapt more easily, reduce the level of resistance to new technology, and increase the overall adoption rate of RME. It also reinforces users' perception that RME is a tool that supports their work and eases various administrative processes. In addition, good design supports a positive user experience, increases user acceptance of the system, and maximizes the potential of RME technology. Thus, the Net benefits of implementing RME can be felt in the form of faster, more accurate, and high-quality services.

According to Doll and Torkzadeh (1991), good visual design includes elements such as color quality, layout, and intuitive display structure. These elements help create a positive user experience, which ultimately increases user adoption and engagement with the system. Reyes et al. (2023) found that a logical visual layout shortens access time to important information, increasing user work efficiency. Zahabi et al. (2015) emphasized the importance of color and contrast to highlight important elements, which helps users understand information faster. The performance expectations and effort perceived by users are greatly influenced by visual quality, which affects system acceptance. Thus, good visuals can support user productivity and work efficiency, which are important elements in technology adoption (Venkatesh et al. 2003).

Content Quality Affects System Users

Based on the results of data analysis in this study, there is a significant effect of RME content on system users, so that the quality of complete RME content will make the RME system more accepted by RME users. Referring to the results of the *three box method* analysis, *the* completeness of the information provided by RME affects user perceptions, users consider a system with complete content will increase their acceptance of RME technology. The completeness of information on RME helps RME users with complete data, users feel more confident in operating RME because all the information needed is available and well organized. This directly contributes to an increase in users' positive perception of the system. When the system content is well-designed, users do not need to spend much time searching for the required patient data or medical information, thus reducing the administrative workload. This supports the perception that RME is a tool that eases their tasks.

Venkatesh et al. (2003) noted that users' effort expectancy is an important factor in determining how easy they find the system to use, which directly impacts their experience.

Yusof et al. (2008) noted that the frequency and intensity of system use reflect the extent to which users feel comfortable and satisfied with the system. Zahabi et al. (2015) found that a well-designed interface makes it easier for users to understand and operate the system, which reduces the risk of errors. The importance of proper training and intuitive visuals increases user acceptance of the system, driving the effectiveness of RME use, Salleh et al. (2021) added that users who are involved in the system implementation process are more likely to support the success of RME implementation. Thus, system user involvement not only increases technology acceptance but also produces significant net benefits.

System Users Affect Net Benefits

Based on the results of data analysis in this study, there is a significant effect of system users on Net benefits, so that increasing acceptance of the use of RME will increase the Net benefits of using RME. Referring to the results of the *three box method* analysis, *the* perceived ease of using RME greatly influences user acceptance and effectiveness in operating the system where the Net benefit of RME that is most felt is its ability to increase job effectiveness. System users who feel that RME is easy to understand and operate will be more able to optimally utilize the features available in the system. An intuitive and user-friendly system makes it easier for users to complete administrative tasks faster, thus reducing the workload of medical personnel. This in turn increases the perceived Net benefits of RME, especially in terms of work effectiveness. To ensure optimal Net benefits, organizations need to provide training to users and continuously refine the system design to better suit users' needs. With system users who are confident in operating RME, the Net benefits of this system can be maximized, both by medical personnel and by the hospital as a whole.

Venkatesh et al. (2003) noted that users' effort expectancy is an important factor in determining how easy they find the system to use, which directly impacts their experience. Yusof et al. (2008) noted that the frequency and intensity of system use reflect the extent to which users feel comfortable and satisfied with the system. Zahabi et al. (2015) found that a well-designed interface makes it easier for users to understand and operate the system, which reduces the risk of errors. The importance of proper training and intuitive visuals increases user acceptance of the system, driving the effectiveness of RME use, Salleh et al. (2021) added that users who are involved in the system implementation process are more likely to support the success of RME implementation. Thus, system user involvement not only increases technology acceptance but also produces significant net benefits.

Visual Design Affects Net Benefits

Based on the results of data analysis in this study, there is a significant effect of RME visual design on the Net benefits, so that with RME visual design that is easy to read will increase the Net benefits of using RME . Referring to the results of the *three box method* analysis, *the* quality of RME visual design directly contributes to the Net benefits of RME implementation. A clear and easy-to-understand interface layout makes it easier for RME users to access and document patient medical information. This speeds up the administrative work process and allows more time to focus on patient care. Intuitive visual design also supports the effective use of RMEs in completing work tasks, making medical personnel more productive and reducing administrative workload. In addition, good design supports a positive user experience, increases user acceptance of the system, and maximizes the potential of RME technology. Thus, the Net benefits of implementing RME can be felt in the form of faster, more accurate, and high-quality services.

Doll and Torkzadeh (1991) emphasized that accurate and understandable content affects user experience, which has a direct impact on system effectiveness. Zahabi et al. (2015) showed that completeness of information helps users make better decisions, which contributes to operational efficiency. Tsai et al. (2020) found that content designed according to user needs increases productivity and reduces workload. Yusof et al. (2008) stated that content quality supports error reduction, which is a major benefit of implementing information systems in the health sector. Reyes et al. (2023) noted that relevant and structured information increases time efficiency in the decision-making process.

Content Quality Affects Net Benefits

Based on the results of data analysis in this study, there is a significant effect of RME content on Net benefits, so that the quality of comprehensive RME content will increase the Net benefits of using RME. Referring to the results of the *three box method* analysis, *the* completeness of information in RME greatly contributes to the perception of Net benefits felt by users where users feel RME is able to increase the effectiveness of their work. The completeness of information in RME makes it easy for users to obtain medical data completely and quickly, enabling users to make medical decisions more effectively, which in turn has an impact on improving the quality of service to patients. To maximize the Net benefits, RME should be designed with content that is relevant, complete, and appropriate to the user's needs. Thus, RME not only helps users in completing their work more effectively, but also supports the hospital in achieving its strategic goals, such as improved service quality and patient satisfaction.

Doll and Torkzadeh (1991) emphasized that accurate and understandable content affects user experience, which has a direct impact on system effectiveness. Zahabi et al. (2015) showed that completeness of information helps users make better decisions, which contributes to operational efficiency. Tsai et al. (2020) found that content designed according to user needs increases productivity and reduces workload. Yusof et al. (2008) stated that content quality supports error reduction, which is a major benefit of implementing information systems in the health sector. Reyes et al. (2023) noted that relevant and structured information increases time efficiency in the decision-making process.

Visual Design, Content Quality and System Users Simultaneously Affect Net Benefits

Based on the results of data analysis in this study, there is an effect of visual design, content quality and system users simultaneously on Net benefits, so that with the support of visual design along with supporting content quality and by increasing involvement by system users will simultaneously increase the Net benefits of using RME. Referring to the results of the three box method analysis shows that the four variables, namely visual design, content quality, and system users are in the high category, in line with the achievement of the benefits variable which is also in the high category. This shows that the Net benefits of RME can be felt by users directly because of the easy-to-read visual design, quality content and perceived convenience by system users.

The synergistic relationship between visual design, content, and system users is the basis for the success of optimal RME implementation. Ahmed et al. (2011) showed that the combination of intuitive visual design and relevant content facilitates clinical decision-making. Reyes et al. (2023) found that simple visual navigation, combined with quality content, can improve user work efficiency. Ludwick and Doucette (2009) added that user trust in the system is highly dependent on the quality of content and interface design. Montague and Asan (2014) noted that communication between doctors and patients becomes more effective with good visualization. Kavuma (2019) showed that adequate training helps users utilize the full potential of the system. Salleh et al. (2021) emphasized that user satisfaction is the result of the synergy between these elements. By optimally combining visuals, content, and system users, the net benefits of RME implementation can be realized in the form of better work efficiency, patient safety, and service quality.

Visual Design Affects Net Benefits With System Users as Intervening Variables

Based on the results of data analysis in this study, there is a significant effect of RME visual design on Net benefits through *intervening* system users so that system user acceptance is able to positively intervene in the relationship between visual quality of RME use and Net

benefits of using RME. Intuitive visual design, such as easy-to-understand layout and efficient navigation, increases users' perception of ease of use and satisfaction with the RME system. When system users feel comfortable and confident in using RME, they are more likely to make the most of the system's features, which in turn increases the Net benefits of RME. These include increased work efficiency, reduced errors, and improved quality of service to patients. Thus, system users serve as an important link that maximizes the influence of RME visual design on Net benefits. Optimal visual design creates a positive user experience, so system users can be the catalyst for maximizing Net benefits. Hospital management needs to prioritize user-friendly visual design and involve system users in visual evaluation to ensure RME provides maximum benefits for all parties concerned.

Reyes et al. (2023) showed that intuitive visual design helps users understand information faster, which improves work efficiency. Zahabi et al. (2015) asserted that good visual quality can reduce users' cognitive load, which supports productivity. Attractive and intuitive visual design increases user engagement. Users are more likely to make optimal use of system features when visuals and content support ease of access and relevance of information. This results in increased Net benefits such as efficiency and job satisfaction (Coorey et al. 2019). Therefore, a well-designed visual design plays an important role in maximizing the benefits of RME implementation, especially when system users are actively involved in the implementation process.

Content Quality Affects Net Benefits With System Users as Intervening Variables

Based on the results of data analysis in this study, there is a significant effect of RME content on Net benefits through *intervening* system users so that system user acceptance is able to positively intervene in the relationship between the quality of comprehensive RME content that supports the use of RME with the Net benefits of using RME. Referring to the results of the *three box method* analysis, *the* completeness of RME content increases user confidence in the information provided by the system. System users who feel that the RME content meets their needs are more likely to actively use the system to support their work, such as faster and more efficient medical decision-making. Thus, good content quality not only meets users' needs but also reinforces the Net benefits of RME, such as increased work effectiveness and reduced errors. System users play an important role as the link that strengthens the influence of content quality on Net benefits. By providing content that meets users' needs, hospitals can maximize the potential of the RME system in improving work efficiency, service effectiveness, and patient safety. Therefore, regular evaluation of RME content quality by involving input from system users is a crucial strategic step to ensure Net benefits are optimally achieved.

The Net benefits of implementing RME can be maximized when the content is designed to meet users' needs and they are actively involved in the implementation process. Doll and Torkzadeh (1991) emphasized the importance of completeness, clarity, and relevance of content in supporting user experience. Yusof et al. (2008) mentioned that users' use of the system and their satisfaction with the content are major factors in achieving operational efficiency and work effectiveness. User-friendly visuals and relevant content play an important role in enhancing user engagement with RME. Clear and accessible data presentation supports patients in understanding their medical conditions. Research results also show that a good user interface can increase system satisfaction and usage (Dendere et al. 2019).

5. CONCLUSION AND ADVICE

Conclusion

1. Visual design has a direct effect on the Net benefits of implementing RME, so to increase the Net benefits of implementing RME can be done by improving the visual design of RME.
2. Content quality has a direct effect on system users, so to increase user acceptance of the RME system, efforts can be made to improve the quality of RME content.
3. System users have a direct effect on the Net benefits of implementing RME. So that to increase the Net benefits of implementing RME can be done by efforts to increase system user acceptance.
4. Visual design has a direct effect on system users, so to increase user acceptance of RME systems can be done by improving the visual design of RME.
5. Content quality has a direct effect on the Net benefits of implementing RME so that to increase the Net benefits of implementing RME can be done by efforts to improve the quality of RME content.
6. Visual design, content quality and system users strongly contribute to the Net benefits of implementing electronic medical records so that to increase the Net benefits of implementing RME, efforts can be made to improve visual design, content quality and system users.
7. The visual design of RME affects the Net benefits of implementing RME through the indirect influence of system users, so that system users strengthen the influence of visual design on the Net benefits of implementing RME.

8. The quality of RME content affects the Net benefits of implementing RME through the indirect influence of system users, so that system users strengthen the influence of content quality on the Net benefits of implementing RME.

Advice

Based on the results of the research that has been conducted regarding the application of RME, the following suggestions can be given:

1. For Hospital
   a. Hospitals need to evaluate and improve the RME menu structure by involving direct users, such as care professionals, in the redesign process. This can start with a thorough audit to identify difficult-to-understand or irrelevant menu elements, followed by the implementation of user-driven design principles that prioritize simplicity and intuitive navigation. In addition, hospitals need to provide intensive training to medical staff to ensure they understand the updated system, as well as support them with easily accessible digital guides. It is also important to pilot the new menu structure to evaluate its effectiveness in daily workflows, with feedback collection for further improvement. With these steps, the RME menu structure can be optimized to be more logical and easy to follow, thus supporting work efficiency and service quality.
   b. Hospitals need to improve the organization of historical patient data in the RME by ensuring that the system can record and display information in a complete, structured and easily accessible manner. This can be done through developing more intuitive data search features, grouping information based on relevant medical categories, and integrating data from various service units to ensure patient medical records are comprehensive. In addition, training for system users is required so that they can input data with greater consistency and accuracy. Regular auditing of historical data is also important to identify gaps and prevent missing or overlapping information. With these steps, the relevance of the information in RME can be improved, thereby supporting more effective and efficient medical decision-making.
   c. Hospitals need to improve the reliability and efficiency of the RME system to better support users in completing job tasks and searching and managing patient data more easily and quickly. This can be done by optimizing system performance, such as speeding up response time and simplifying the data search process through more advanced and user-friendly search features. In addition, reducing unnecessary administrative steps and developing a more intuitive interface layout can help speed up navigation within the system. Continuous training for users is also necessary to make

them more skillful in using the features provided by the RME. With these steps, the RME system can become a more effective tool in supporting user productivity and providing Net benefits in patient care.

d. Hospitals need to improve the RME system's ability to detect and provide early warning of potential errors before they occur. This can be done by integrating rule-based algorithms that can automatically check for data discrepancies, such as dangerous drug interactions, incorrect dosage, or incomplete patient data. In addition, the system can be designed to provide Net-time notifications to users when a potential error is detected. Training to users is also required so that they understand how to optimally utilize this alert feature. By improving the error reminder function, RME systems can significantly contribute to improving patient safety and work process reliability in hospitals.
e. Hospitals need to appoint an *RME Superuser*, an individual with technical expertise and in-depth understanding of the RME system features and functions, to support other users in operating the system optimally. These superusers should be selected from healthcare personnel who understand clinical workflows, such as doctors, nurses, or medical administrative personnel, as their direct involvement with operational processes can improve the effectiveness of system implementation. Superuser criteria include a thorough understanding of the RME system, analytical ability to evaluate user feedback, good communication skills to provide training, and the ability to serve as a bridge between users and the system development team. With intensive training, superusers can take a leadership role in RME implementation, ensuring the system is used effectively and supporting the development and resolution of user challenges.
f. Hospitals need to conduct ongoing evaluation of the RME system by involving feedback from direct users to identify areas that require improvement. This evaluation process may include collecting user perception data, conducting periodic user testing, and analyzing user needs that continue to evolve in accordance with hospital operations. In addition, hospitals are advised to form a Medical Records Committee tasked with conducting regular RME system audits. This audit aims to evaluate the extent to which RME utilization supports the hospital's strategic targets, including the effectiveness, efficiency, and security of the system, as well as its impact on the productivity of medical personnel and the quality of patient care. Collaboration between the Medical Records Committee and direct users will ensure that the evaluation and audit results are translated into continuous improvement, so that the RME system can continue to be relevant, safe, and provide maximum benefits to the hospital and its users.

2. For Future Researchers
    a. For future researchers to conduct further research on the evaluation of RME implementation with qualitative research so that user perceptions can be explained in depth.
    b. Future researchers could assess the impact of training and developing user competencies on the effective use of RME. This research could include evaluating the effectiveness of various training methods, such as simulation-based training, mentoring by superusers, or e-learning modules, as well as their impact on user performance and reduction of administrative errors.
    c. Future research could focus on how organizational policies and support, such as the establishment of a medical records committee or budget allocation, influence the successful implementation and utilization of RME. This research can provide insights into effective change management strategies in supporting digital transformation in hospitals.

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