



## The Effect of Implementing EMR on User Acceptance of Electronic Medical Records based on The Unified Theory of Acceptance and Use of Technology (UTAUT) 2 in Hospital

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### Abstrak

Kementerian Kesehatan mewajibkan setiap fasilitas kesehatan di Indonesia untuk menegakkan RME berdasarkan peraturan menteri kesehatan (Permenkes No 24/2022). Namun, penggunaan RME di Indonesia masih menemukan kendala dalam penerimaan pengguna berdasarkan metode UTAUT 2. Penelitian ini bertujuan untuk mengkaji implementasi RME terhadap penerimaan pengguna di rumah sakit. Metode yang digunakan dalam penelitian ini adalah tinjauan pustaka dengan meriview 30 artikel jurnal yang diterbitkan antara tahun 2020 hingga 2024 yang diambil melalui google scholar. 4 artikel yang diambil berdasarkan kata kunci yang sama. Hasil penelitian menunjukkan adanya faktor faktor yang mempengaruhi penerimaan pengguna berdasarkan pada model UTAUT 2, dimana *Performance Expectation*, *Effort Expectation*, *Social Influence*, *Facilitating Condition*, *hedonic Motivation*, *Price Value* and *Habits* berpengaruh terhadap *Behaviour Intention* dan *Use Behavior* pada penggunaan RME. Di beberapa studi, terdapat juga variabel moderasi seperti jenis kelamin dan pengalaman kerja memiliki hubungan yang dapat mempengaruhi niat dan perilaku pengguna. Pada penelitian ini diharapkan dapat mendorong seluruh fasilitas kesehatan yang ada di Indonesia untuk dapat melakukan evaluasi penilaian dalam optimalisasi penggunaan RME.

**Kata Kunci:** Penerimaan Pengguna, Rekad Medis Elektronik, UTAUT 2

### Abstract

*The Ministry of Health requires every health facility in Indonesia to maintain electronic medical records based on Minister of Health Regulation (Permenkes No.24/2022). However, the use of EMR in Indonesia still finds many obstacles in user acceptance based on UTAUT 2 method. This research aims to assess the implementation of EMR on user acceptance in hospitals. The research uses a literature review method by reviewing 30 journal articles published between 2020 until 2024, which were retrieved via Google Scholar. 4 eligible articles were selected. The results show that there are factors that influence user acceptance based on the UTAUT 2 Model, which is performance expectations, effort expectations, social influence, facilitating conditions, hedonic motivations, price values and habits influence the behavior intentions and Use Behavior of EMR users. In several studies, there are moderating variables such as age, gender and work experience that influence the relationship between constructs that build user intentions and behavior. This research to encourage all health facilities to carry out evaluations in optimizing the use of EMR.*

**Keywords:** User acceptance, electronic medical record, UTAUT 2

## INTRODUCTION

Electronic Medical Record (EMR) is a technological tool designed to collect, store, process, and access patient medical data in hospitals (Nasir, 2013). Some hospitals in Indonesia have integrated EMR with the Hospital Information Management System (SIMRS), a primary application that includes not only EMR but also additional features such as administration, billing, nursing documentation, reporting, and scorecard dashboards (Lakhmudien, Rano, & Nugraha, 2023).

The implementation of EMR has been carried out globally. According to a 2015 global survey on e-health by the World Health Organization (WHO), 57 countries (46%) out of 125 countries reported using EMR systems (Tiorentap, 2020). In Indonesia, EMR implementation has been a target of the Ministry of Health, which issued Regulation Number 24 of 2022 concerning EMR (Kapitan, Farich, & Aji, 2023).

Despite these efforts, EMR implementation in Indonesian hospitals has not yet reached its 2020–2024 target. The latest report in 2023 shows that only 1,993 hospitals (63.51%) out of 3,138 hospitals have implemented EMR, while 1,145 hospitals (36.5%) have not yet adopted it (Ministry of Health, 2024). The most frequent obstacles to EMR implementation include limited funds, inadequate infrastructure, lack of user capacity, and insufficient legal frameworks. Furthermore, health workers often lack technical computer skills, necessitating careful planning and coordination to meet user needs effectively (Tiorentap, 2020).

One major challenge in Indonesia is user acceptance of EMR systems. Understanding user acceptance is crucial as it can guide recommendations for increasing EMR adoption, ultimately improving the quality of patient services (Ministry of Health, 2023). A

theoretical framework frequently applied to examine technology acceptance is the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model, introduced by Venkatesh et al. (2012). This model expands on the original UTAUT by including consumer-related constructs in addition to organizational aspects. Research demonstrates that UTAUT2 improves the explanation of user intention (from 56% to 74%) and user behavior (from 40% to 52%) compared to the original model, as shown in a survey of 1,512 mobile internet consumers (Venkatesh et al., 2012).

This study aims to assess the implementation of EMR in relation to user acceptance in hospitals. Previous research indicates that the factors influencing EMR adoption vary across hospitals.

## METHOD

The Methods applied in this article is a Literature Review. The study conducts a review of related articles with Topic using keywords User Acceptance, UTAUT 2, Electronic Medical Record (EMR) in Google Scholar database for the last five years (2020-2024). Requirements publication is article text complete in Indonesian or Language English published in the last 5 years

## RESULT AND DISCUSSION

There are 4 articles from 30 articles were found in this Research that met the requirements criteria according to keywords, can seen in **Table 1**.

Based on results study with using a literature review there were 4 articles based on keywords *User acceptance*, *UTAUT 2*,

*Electronic Medical Record*. Four studies use quantitative method with SEM-PLS analysis. In the study by Lulin et al., (2020) the object of their research is nurses, in Tsani et al., (2021) study, the object their research are doctors, while both Cholifah et al., (2022) and Ayukharisma & Santoso et al, 2024 studies, the object are health workers.

The findings obtained from four studies is that in the research Lulin et al., (2020), there are 3 supporting variables behavioral intention user Electronic Medical Record namely Social Influence, Attitude To Use Technology and facilitating conditions all of these give influential positive and significant. In the study Tsani et al., (2021) all over UTAUT variables affect behavioral intention to user acceptance of Electronic Medical Record.

In the research Cholifah et al., (2022), only variable effort Expectations that give positive to intention user influence whereas variable Social Influence and Facilitating Conditions not give influence to behavioral intention for user acceptance. Variable Performance Expectancy, Hedonic Motivation Hedonis and Habit are excluded from the structural model Because No fulfil

condition in outer model measurement. In the study Ayukharisma & Santoso et al, 2024, only variable Performance Expectations that give influence to user acceptance.

Of the four reviewed articles, there are differences in influencing factors reception user in every study using the UTAUT 2 Model. Conditions from every facility health service can give different in user acceptance. Likewise the conditions each profession as users are different in its acceptance. This is in the background behind by differences Power responsive in adoption Electronic Medical Record against level the complexities faced in application. According to Alquraini et al., 2007, that Nurses tend to be resistant to the use of high health technology, but they have intentions that are considered encouraging and make significant contributions. Therefore, the acceptance of Electronic Medical Records users needs to be considered. Although decision use system technology information there is in the hospital management will but for the success implementation technology depending on its acceptance and use by each user Fardiansyah, 2023.

**Table 1.** Study results based on keywords

Author /Year	Title	Objective	Method	Results
Lulin et al, (2020)	<i>The Contributing Factors to Nurses' Behavioral Intention to Use Hospital Information Technologies in Ghana</i>	To explore factors influencing the acceptance of HIT by Ghanaian nurses.	Descriptive non-experimental research design SEM-PLS path analysis	“Social Influence” (t 1/4 3.656, p < .001), “Attitude Toward Technology Use” (t 1/4 5.861, p < .001), and “Facilitating Conditions” (t 1/4 2.616, p < .001) were the main predictors of nurses' behavioral intention to use HIT. The effects of the above-mentioned constructs explained 60.7% (R <sup>2</sup> 1/4 0.607) of the variance in nurses' intention to use HIT systems.
Tsani et al. (2021)	<i>Analysis Of Application Of The UTAUT Model On Behavior Of Use Of Electronic Medical Records In RSUD Prof Dr Margono Soekarjo Purwokerto</i>	Soekarjo General Hospital, Purwokerto.	Study quantitative with design study <i>cross sectional</i> Analysis : SEM-PLS	All over UTAUT variables affect behavior use record medical electronics at Prof. Dr. Margono Soekarjo General Hospital , Purwokerto. with the total R <sup>2</sup> value is 88.61%.
Cholifah et al., (2022)	<i>Factors influencing the Implementation of Electronic Medical Records Remics ) based on Unified Theory of Acceptance and Use of Technology (UTAUT) in Sidoarjo Hospital</i>	For describe factors that influence Implementation Record Electronic Medical ( Remics ) based Theory <i>Unified Theory of Acceptance and Use of Technology (UTAUT)</i> at Sidoarjo Regional Hospital	Study quantitative with analytical survey Analysis : EM-PLS	There is influence positive from <i>Effort expectancy EE</i> - against <i>Behavioral intention</i> whereas <i>Facilitating Conditions</i> and <i>Social Influence</i> No own influence direct towards Behavioral intention.
Ayukharisma & Santoso, (2024)	<i>Examining Healthcare Professionals' Acceptance of Electronic Medical Records Systems using Extended UTAUT2</i>	To analyze user acceptance of the Electronic Medical Record system using extended <i>Unified Model Theory of Acceptance and Use Technology 2</i> at	Study analytic quantitative with descriptive data analysis Analysis : SEM-PLS	Expectation performance have influence positive and significant significant to reception user whereas aspect effort expectations , influence social ,

Author /Year	Title	Objective	Method	Results
		PKU Muhammadiyah Hospital, Bantul.		facilitating conditions , motivation hedonistic , value price , habits , beliefs and perceived risks No affect acceptance user to EMR system . Variables gender and age moderation found No affect the relationship between variable .

### CONCLUSION

From the 30 journals that were screened and analyzed with keywords 4 journals were obtained for the years 2020-2024 based on user acceptance system information health according to the Unified Theory of Acceptance and Technology Use (UTAUT) model. The result of the study shows that there is difference factors that

influence user acceptance in apply Electronic Medical Record where condition from each health service facility.

Different in user acceptance, as well as profession its users. Therefore, every health service facility should make analysis about user acceptance so they can give good recommendation in success implementation Electronic Medical Record.

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