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Application of the UTAUT (Unified Theory of Acceptance and Use of Technology) Model to Analyze the Acceptance Level of Using Zi.care at RSIJ (Jakarta Islamic Hospital) Cempaka Putih, Indonesia

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A B S T R A C T

Jakarta Islamic Hospital Cempaka Putih is a teaching hospital. Based on the results of observations, it was found that there were problems in implementing Zi.care at this hospital, where the system had been used but was temporarily stopped. Zi.care is a SIMRS and also an RME at RSIJ Cempaka Putih. The aim of using Zi.care is to make services effective and efficient, administration more informative and integrated, information that is real-time, integrated with BPJS, making online registration and telecommunications easier via Mobile App, and patients can manage their own medical records via Mobile App. This study aimed to evaluate Zi.care using the UTAUT method at RSIJ Cempaka Putih. This research uses a cross-sectional design with a quantitative approach to an analytical observational study to determine the relationship between causal factors and effect factors in the application of Zi.care. Sampling technique with proportionate stratified random sampling, namely sampling based on the number of divisions from each sub-population consisting of medical staff, doctors, pharmacists, laboratory assistants, radiologists, and nurses. The sample was 150 respondents who used Zi.care. The results of the normality test show that the data is abnormal because the p-value < 0.05, so the cut point taken is the median. Hypothesis testing is carried out using statistical calculations Chi-square with the help of software SPSS 24.0. The research results show that performance expectations, effort expectations, and social influence have a relationship with usage intention while facilitating conditions have no relationship with usage behavior.

1. Introduction

Amid the rapid development of technology in the industrial era 4.0, several changes have been made in various sectors, one of which is the health sector. The health sector, as an institution that provides services to the community, must be able to keep up with developments in technology and information to improve the quality of its services. The quality of health services is a step in improving health services in accordance with the expected output and in accordance with the latest professional knowledge. To develop professional knowledge, innovation is needed to improve health information systems. One of the health information systems is SIMRS, which was built from the front office, including registration, services, payments, etc., as well as the back office, including accounting, budgeting, asset management, and inventory control. One of the important things at the heart of the information in SIMRS is medical records. Medical records are a means of communication needed by both patients and health service providers for consideration in determining a policy in the medical treatment process and are used as a source of information. In 21st-century records, conventional medical care was deemed no longer suitable, so electronic medical records (RME) were created.[1-5]

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Electronic medical records (RME) are an electronic storage place for information regarding the health status and health services received by patients throughout their lives, stored in a database so that it can provide the various information needed in a short time. Even though the principle is electronic, the implementation of electronic medical records is not truly paperless but only less paper because some data such as identity data, forms of informed consent, consultation results, radiology supporting examination results, and several other forms must remain in paper form (print out). The application of electronic medical records in hospital outpatient units is still found in actual user aspects (actual system use) by 64%. This is because not everyone can use it smoothly, loading old systems and sometimes errors so that they interfere with user performance, and there are still people who don't want to use it. Several studies state that the use of RME is still not optimal because there are still many obstacles found that can have an impact on the low level of officer acceptance of the implementation of RME. If an evaluation is not carried out immediately, this will make resistant users not want to use the system because they feel that using the system will hinder their work. Therefore, it is necessary to study user behavior in accepting a system.[6-10]

Jakarta Islamic Hospital Cempaka Putih, which is located at Jalan Cempaka Putih Tengah Number 1, Central Jakarta, is one of the type B hospitals that has implemented RME in its services. Starting in 2006, RSIJ Cempaka Putih has started using SIMRS, and in 2022, RSIJCP wants to implement SIMRS and, at the same time, become RME. The system is called Zi.care. However, in its implementation, obstacles were found, namely bugs from the application itself, the network is slow, and there are still some doctors and nurses who don't want to use Zi.care because the menus that appear on Zi.care are too many and complicated, users must provide effort deeper into using Zi.care, such as the registration flow for BPJS patients is too complicated so it can take 3 minutes to serve BPJS patients. As a result of these problems, Zi.care was temporarily suspended.

2. Methods

This research is a quantitative research, analytical, observational study with a cross-sectional design. The research was conducted at the Jakarta Cempaka Putih Islamic Hospital located on Jalan Cempaka Putih Tengah 1/1 Central Jakarta, DKI Jakarta 10510. This research was carried out from October to May 2023. Initial observations were carried out in November 2022, and data collection was carried out in February 2023. The target population in this study were officers who had used Zi. care. The total population using Zi.care is 237 people. The total sample size taken was 150 respondents. The sampling technique used is proportionate stratified random sampling. The inclusion criteria are health workers who are authorized to access Zi.care, namely doctors, nurses, medical recorders, pharmacists, radiologists, and laboratory assistants. Exclusion criteria were health workers who had never used Zi.care and who were not willing to be respondents.

The variables in this research consist of work expectations, business expectations, social influence, facilitating conditions, user interest, and usage behavior. The data collection technique in this research used direct interviews with respondents regarding the use of Zi.care at RSIJ Cempaka Putih. The data collection instrument used was a closed questionnaire. Normality test results with Kolmogorov-Smirnov test show a p-value. The value is <0.05, meaning the data is not normal, so the cut-off point used is the median. Data analysis in this research is univariate and bivariate analysis. Univariate analysis is to determine the distribution of the sample data, while bivariate analysis is to prove the hypothesis with statistical Chi-Square tests because the data analyzed in this study is categorical vs. categorical. Data analysis using help software SPSS 24.0 (statistical package for the social science).

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3. Results and Discussion

This research used 150 research respondents to evaluate Zi.care using the UTAUT method at RSIJ Cempaka Putih. As for the picture characteristics, the 150 respondents in this study can be seen in Table 1 below.

Table 1. Description of respondent characteristics at RSIJCP.

Characteristics	Frequency	Percentage (%)
Gender		
Male	53	35,3%
Female	97	64,7%
Age		
≤ 25 years	29	19,3%
26 – 45 years	85	56,7%
≥ 46 years	36	24%
Type of jobs		
PMIK	23	15,3%
Doctor	16	10,7%
Laboratory	22	14,7%
Nurse	30	20%
Radiologist	12	8%
Pharmacist	47	31,3%

Based on Table 1, it can be seen that in terms of gender, the majority are women (64.7%). In terms of age, the majority of respondents were aged 26 – 45 years (56.7%). In terms of job type, the majority of respondents were pharmacists (31.3%). The results of the univariate analysis of the use of Zi.care at RSIJ Cempaka Putih can be seen in Table 2 below.

Table 2. Univariate analysis - Recapitulation of respondents' responses to the use of Zi.care at RSIJCP.

Variable	**Frequency**	**Percentage (%)**
Job expectations		
Low	79	52,7%
High	71	47,3%
Business expectations		
Not easy	80	53,3%
Easy	70	46,7%
Social influence		
Not good	83	55,3%
Good	67	44,7%
Facilitating conditions		
Not support	126	84%
Support	24	16%
User interest		
Low interest	89	59,3%
High interest	61	40,7%
Usage behavior		
Seldom	61	40,7%
Often	89	59,3%

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Based on Table 2, it can be seen that the response of officers to the use of Zi.care at RSIJ Cempaka Putih, seen from the job expectation indicator, namely (52.7%), stated it was low. The officers' response was seen from the business expectation indicator, namely (53.3%) stated that it was not easy. The officers' response was seen from the social influence indicator, namely (55.3%) said it was not good. The officers' response was seen from the indicators of facilitating conditions. Namely (84%) stated that they did not support it. The officers' responses were seen from the indicator of interest in the use. Namely (59.3%) expressed low interest. The officers' responses were seen as indicators of usage behavior. Namely (59.3%) stated that they often use it. The results of the bivariate analysis of the use of Zi.care will be discussed in this section. The relationship between work expectations and user interest in Zi.care can be seen in Table 3 below.

Table 3. Test of the relationship between job expectations and Zi.care user interest.

Job expectations	User interest				Total		OR	p-value
	Low interest		High interest					
	f	%	f	%	f	%		
Low	60	75,9%	19	24,1%	79	100%	4,574	0,000
High	29	40,80%	42	59,2%	71	100%		
Total	89		61		150			

Based on Table 3, it is known that out of 150 respondents, there were 79 respondents who stated low work expectations and had a low interest in using 75.9%. Sig. value = 0,000 (p-value < 0.05), indicating that there is a relationship between work expectations and user interests. Hence, hypothesis H_1 is accepted. By calculation, the odds ratio of the obtained value is 4.574, meaning that work expectations have a 4x risk factor for user interest in using Zi.care at RSIJ Cempaka Putih. The test results of the relationship between business expectations and user interest in Zi.care can be seen in Table 4 below.

Table 4. Test of the relationship between business expectations and Zi.care user interest.

Business expectations	User interest				Total		OR	p-value
	Low interest		High interest					
	f	%	f	%	f	%		
Not easy	59	73,8%	21	26,3%	80	100%	3,746	0,000
Easy	30	42,90%	40	57,1%	70	100%		
Total	89		61		150			

Based on Table 4, it is known that out of a total of 150 respondents, there were 80 respondents who stated that their business expectations were not easy and had a low interest in using it, at 73.8%. Sig. value result = 0,000 (p-value < 0.05) indicates that there is a relationship between business expectations and user interest. Hence, hypothesis H_2 is accepted. By calculation, the odds ratio, the value obtained is 3.746, meaning that business expectations have a 3x risk factor for user interest in using Zi.care at RSIJ Cempaka Putih. The results of the test of the relationship between social factors and user interest in Zi.care can be seen in Table 5 below.

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Table 5. Test of the relationship between social factors and Zi.care user interest.

Social factors	User interest				Total		OR	p-value
	Low interest		High interest					
	f	%	f	%	f	%		
Not good	62	74,7%	21	25,3%	83	100%	4,374	0,000
Good	27	40,30%	40	59,7%	67	100%		
Total	89		61		150			

Based on Table 5, it is known that from a total of 150 respondents, there were 83 respondents who stated that social influence was not good and had a low interest in using it at 74.7%. Sig. value results = 0,000 (p-value < 0.05) indicates that there is a relationship between social factors and user interest. Hence, hypothesis H_3 is accepted. By calculation, the odds ratio of the obtained value is 4.374, meaning that social factors have a 4x risk factor for user interest in using Zi.care at RSIJ Cempaka Putih. The test results of the relationship between facilitating conditions and usage behavior towards Zi.care can be seen in Table 6 below.

Table 6. Test of the relationship between facilitating conditions and usage behavior of Zi.care.

Facilitating conditions	Usage behavior				Total		OR	p-value
	Seldom		Often					
	f	%	f	%	f	%		
No support	51	40,5%	75	59,5%	126	100%	0,952	0,913
Support	10	41,70%	14	58,3%	24	100%		
Total	61		89		150			

Based on Table 6, it is known that out of a total of 150 respondents, 126 respondents stated that the condition of the facilities did not support their frequent use behavior at 59.5%. Sig. value results = 0,913 (p-value > 0.05) indicates that there is no relationship between facilitating conditions and usage behavior. Hence, hypothesis H_4 rejected.

Job expectations are defined as the level to which an individual believes that using the system will help him or her to improve performance. The results of the statement in the questionnaire, which discusses the speed of response from Zi.care, illustrate the existence of a phenomenon related to users' lack of confidence in Zi.care's contribution to speeding up the completion of officers' work. This is in contrast to the benefits of using information technology, where work managed with a computer system will be faster and easier. This is quite unfortunate because a user will see in terms of the speed they feel when using the system, so this system can save time in completing work and ultimately improve their work performance. This incident proves that system quality is still not paid enough attention to. Quality systems are assessed by the speed of responding well. hypothesis testing shows that there is a relationship between job expectations and behavioral interests. Therefore, if improvements have been made to performance expectation factors, namely in terms of infrastructure that can support speed response from the system, the officers will use Zi.care to complete their work because they feel that with Zi.care their work will be faster than the manual method. By looking at the usefulness, motivation, and benefits resulting from using the system, officers will be interested in utilizing the system with the aim of

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improving their performance. The results in this study support the findings in other studies, which say that work expectations have a relationship with intention to use.[11-13]

Effort expectancy is defined as the user's ease in using the system. The results of the statements in the questionnaire, which discussed the level of difficulty felt, explained that using Zi.care was still difficult. This is quite unfortunate because other studies say that ease of use of the system will create a feeling of interest in the user that the system is useful so that it can create a feeling of comfort when using it and help complete their work. To overcome this, adjustments need to be made regarding the system flow, which is considered difficult and difficult to implement usability ideals. Five conditions to reach the level of usability, namely, easy to learn, efficient to use, easy to remember features, low error rate, and users feel satisfied so officers will find it easier to use Zi.care. hypothesis testing shows that there is a relationship between Effort expectations are related to behavioral intentions. Therefore, if the level of ease in using Zi.care is high, officers will use Zi.care to complete the work. The results in this study support the findings in other studies, which concluded that business expectations have a relationship with the interest of hospital information system users in Jati Husada Karanganyar.[14-17]

Social influence is defined as the degree to which an individual believes that others should use the system. From the results of the statements in the questionnaire, it was found that there was encouragement from friends and hospital leaders to use Zi.care to do their work. However, there is no difference between officers who use Zi.care and officers who do not use Zi.care in carrying out their work. This shows that the encouragement to use the system has been implemented but is not supported by organizational support. Organizational support is a person's belief that the organization where he works values his contributions, such as giving rewards in the form of appreciation or mentoring. It would be quite a shame if an evaluation was not carried out because it would result in low interest in using it. That matter This is because there is no difference between those who do not use the system and those who use the system, so officers think it is better not to use it rather than to face difficulties when using it. It is necessary for the RSIJCP to implement a better performance monitoring policy to ensure that all officers carry out their work in accordance with the applicable SOPs. hypothesis testing shows that there is a relationship between social factors and behavioral interests. Therefore, the presence of social support will encourage officers to use Zi.care to complete their work. When officers feel there is organizational support, they will demonstrate behavior that can help achieve organizational goals and be willing to work with extra *effort*. The results in this study support the findings in other studies, which concluded that social influence has a relationship with user interest.[18-21]

Facilitating conditions are defined as objective factors outside the environment that make it easier for users to act/work. From the results of the statement on the questionnaire, it is known that there already exists staff who can help officers if they encounter problems when using Zi.care. However, in terms of compatibility, they do not yet meet the needs in accordance with the specifications determined in each division in carrying out services to patients. From the results of univariate calculations, the majority of respondents answered that they often use Zi.care. This research is not in line with other research, which states that someone who feels that they are very facilitated by their surrounding environment will influence their behavioral intentions in using a new system in that environment, which is different if someone does not feel helped by existing facilities. Therefore, it is necessary to adjust Zi.care again by adding features according to the user needs criteria for each division. hypothesis testing shows that there is no relationship between conditions that facilitate

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usage behavior. Therefore, it is known that frequent usage behavior is not always influenced by facilitating conditions but due to job demands that require officers to use the system, so that even though the application does not meet the needs, it still has to be used. The results in this study support the findings in other studies, which concluded that facilitating conditions had no effect on usage behavior, so more facilities were needed to access the system.[22,23]

4. Conclusion

There is a relationship between work expectations and user interests (p-value = 0.000), there is a relationship between business expectations and user interests (p-value = 0.000), there is a relationship between social factors and user interests (p-value = 0.000), none relationship between facilitating conditions and usage behavior (p-value = 0.913).

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