

The Effect of Online Registration System on Outpatient Satisfaction

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Abstract

This study aims to analyze the effect of online registration system on outpatient satisfaction . The background of this study focuses on the need for improving fast, efficient, and technology-based health services to meet patient expectations. The online registration system is expected to reduce queues, speed up the administrative process, and improve patient comfort. This study uses a quantitative method with a cross-sectional approach. The sampling technique was carried out using the *simple random sampling method* , with the criteria of patients using the online registration system in December 2024, namely 115 patients. Data were collected through a questionnaire that measured aspects of patient satisfaction, such as ease of access, speed of service, data accuracy and system convenience. Data analysis was carried out using a simple linear regression test to identify the effect between the online registration system and patient satisfaction levels. The results of the study showed a positive and significant effect between the online registration system and patient satisfaction. This system simplifies the registration process and increases positive perceptions of the quality of hospital services. Therefore, it is recommended to improve the quality of information technology and training for officers to ensure the sustainability of excellent services and further development of system features is needed to improve accessibility and reliability of services.

Keywords: Online Registration System, Patient Satisfaction, Hospital

1. Introduction

Hospitals are institutions that have a vital role in providing health services to the community. As a health service center, hospitals are required to provide quality, fast, and efficient services to meet patient expectations and needs. One form of service that is often used by patients is outpatient services, which allow patients to get a diagnosis and treatment without having to be hospitalized (Trimumpuni, 2010).

Outpatient services have an important role in the health care system, because the volume of patients using them tends to be higher compared to inpatient services. The outpatient service process begins with patient registration, which is the initial and crucial step in the hospital service system. Effectiveness and efficiency at this stage greatly affect patient perceptions of the overall quality of hospital services (Saputro, 2015).

In general, the patient registration system used in many hospitals is still manual. This system requires patients to come directly to the hospital to fill out the form physically and wait in line at the registration counter. This process often causes inconvenience, such as long waiting times, crowded lines, and potential administrative errors. This problem can have an impact on patient dissatisfaction with the services received (Budi, 2011).

Along with the development of information and communication technology, many hospitals have begun to switch to an online registration system. This system offers convenience for patients to register online without having to come directly to the hospital. Patients can access

this service through a website or application, so they can choose a visit schedule that suits their needs (Afdoli & Malau, 2019).

Digitizing patient registration brings various benefits, including reducing waiting time, increasing data accuracy, and minimizing the risk of errors in the administrative process. With this system, patient information can be managed in a more structured and secure manner, supporting a more effective and efficient medical service process (Nelson, Todd, & Wixom, 2005).

The implementation of online registration system in hospitals also has a significant impact on patient satisfaction. Patient satisfaction reflects their perception of the quality of services provided and is an indicator of the success of hospital services. This system allows patients to feel the ease and comfort in accessing health services, which ultimately increases loyalty and trust in the hospital (Nofiana & Sugiarsi, 2011).

However, the implementation of the online registration system also faces several challenges, such as the readiness of technological infrastructure, staff skills in operating the system, and patient education on how to use this service. Therefore, ongoing efforts are needed to ensure that this system can be accessed and utilized optimally by all levels of society (Saputra et al., 2020).

Hospitals, as one of the main health facilities, have a great responsibility in providing optimal services to the community. With the increasing number of outpatients, the challenges faced by hospitals are increasingly complex, especially in the patient registration process. The manual registration process that has been implemented so far often causes various obstacles, such as long queues, administrative errors, long waiting times, and patient dissatisfaction with the services provided. These problems not only impact the patient experience, but can also affect the overall image of the hospital.

As part of efforts to improve the quality of service, an online registration system has been adopted. This system is designed to make it easier for patients to register, either through the application or the official website, so that patients can choose a visit time without having to come directly to the hospital. The implementation of the online registration system is expected to be able to overcome various problems that previously arose in the manual registration process. In addition, this system is also part of the digital transformation in health services, which is in line with government directives in accelerating the adoption of technology in various public sectors (Presidential Regulation No. 82 of 2023). However, the effectiveness of the implementation of this system needs to be further evaluated to ensure that its use truly has a positive impact (Budi, 2011).

RSUD Dr. H. Mohamad Rabain Muara Enim has adopted an online registration system as part of an effort to improve the quality of service. This system is expected to be able to overcome problems that have arisen in the manual registration process and increase patient satisfaction. However, the effectiveness of the implementation of this system needs to be further evaluated to ensure that its use truly has a positive impact (Budi, 2011).

This study places emphasis on the dimensions of outpatient satisfaction. The emphasis on satisfaction includes elements of user experience, such as ease of access, speed of service, clarity of information, and convenience, which may not have been reviewed in depth in previous studies. This study specifically examines how the online registration system affects outpatient satisfaction, a focus that combines the dimensions of technology and health services.

The final results of this study are expected to provide recommendations for the development of online registration systems in the future.

2. Literature Review

2.1 Online Registration System

The online registration system is one form of information technology application in health services. This system allows patients to register for health services through digital platforms, such as websites or mobile applications, without having to come directly to health facilities. According to Laudon and Laudon (2020), information technology has an important role in increasing the efficiency and effectiveness of organizational operations, including in the health sector. The online registration system is designed to reduce waiting times, simplify administrative processes, and increase accessibility of health services for the community. The success of implementing an online registration system depends on factors such as ease of use, system reliability, and patient data security. Davis (1989) through the Theory of Technology Acceptance Model (TAM) emphasized that the perception of ease of use and benefits of a technology influences the user's attitude in adopting the technology.

2.2 Patient Satisfaction

Patient satisfaction is an important indicator in assessing the quality of health services. Patient satisfaction is defined as the degree of difference between patient expectations of the services received and their perceptions of the services provided (Kotler & Keller, 2016). In the context of health services, patient satisfaction can be influenced by various aspects, such as service quality, accessibility, comfort, and interaction with medical personnel. According to Parasuraman, Zeithaml, and Berry (1988), service quality can be measured through five dimensions of SERVQUAL, namely reliability, responsiveness, assurance, empathy, and tangibles. In this case, the online registration system can affect the dimensions of reliability and responsiveness, because the system is designed to ensure the registration process runs smoothly and is responsive to patient needs.

2.3 The Influence of Online Registration System on Patient Satisfaction

The effect of online registration system on patient satisfaction can be explained through the increased efficiency and convenience offered by the system. The online registration system allows patients to schedule visits flexibly, reduce queue times, and provide more transparent and accurate information. Research by Yang et al. (2020) shows that the use of information technology in health services has a positive impact on patient satisfaction, especially in terms of convenience and accessibility. In addition, the online registration system also supports improving the quality of service through better patient data management. This allows hospitals to provide more personalized services, which ultimately increases patient satisfaction (McColl-Kennedy et al., 2017).

3. Research Method

This study uses a quantitative method with a cross-sectional approach, where data is collected in a certain period of time. The population of this study were patients who used the online registration system at Dr. H. Mohamad Rabain Muara Enim Hospital in December as many as 160 patients. The sampling technique was carried out by the *accidental sampling method* as many as 115 patients.

The research instrument used was a questionnaire that measures aspects of patient satisfaction such as ease of access, speed of service, data accuracy and system convenience . Validity and reliability tests were carried out to ensure that the instrument has a good level of reliability. Data were analyzed using a simple linear regression test to determine the effect of the online registration system on patient satisfaction (Sugiyono, 2019).

4. Findings and Discussions

Respondents in this study have characteristics consisting of (1) status as outpatients: using online registration, (2) gender: male and female, (3) frequency of visits: respondents who frequently use online registration services more than 2-3 times in the last few months compared to those who have only used the system once. After the respondents were determined, validity and reliability tests were carried out. The following are the validity and reliability tests of the research instrument:

1. Convergent Validity Test

Table 1. Convergent Validity Test Results

Latent Variables	Indicator	Loading Factor	AVE	Information
Ease of Access	Access1	0.82	0.67	Valid
	Access2	0.85		
	Access3	0.78		
Service Speed	Fast1	0.81	0.65	Valid
	Hurry up	0.87		
	Fast3	0.76		
Data Accuracy	Accurate1	0.83	0.68	Valid
	Accurate2	0.86		
	Accurate3	0.77		
System Convenience	Comfortable1	0.88	0.70	Valid
	Comfortable2	0.84		
	Comfortable3	0.78		

Based on table 1, all latent variable indicators have a *loading factor* > 0.7 and *AVE* > 0.5 , this indicates that each indicator is able to represent the latent variable significantly. The AVE (Average Variance Extracted) value for all latent variables is also above 0.5, which means that the latent variable can explain more than 50% of the variance of each indicator. Thus, the indicators used in this study are valid enough to measure the variables studied.

2. Discriminant Validity Test (Fornell-Larcker Criterion)

Discriminant validity test is conducted to measure the extent to which a construct is truly different (discriminant) from other constructs in the research model. The following are the results of the discriminant validity test:

Table 2. Results of Discriminant Validity Test (Fornell-Larcker Criterion)

Latent Variables	Ease of Access	Service Speed	Data Accuracy	System Convenience
Ease of Access	0.82	0.68	0.65	0.63
Service Speed	0.68	0.81	0.62	0.60
Data Accuracy	0.65	0.62	0.83	0.59
System Convenience	0.63	0.60	0.59	0.84

Based on table 2, it shows that the Fornell-Larcker criteria, the square root of AVE of each latent variable is greater than the correlation between latent variables. This indicates that the variables in this study (ease of access, speed of service, data accuracy, and system convenience) have their own uniqueness and do not overlap in explaining patient satisfaction. The diagonal value (in bold) shows the square root of AVE and is greater than the correlation between variables, so that discriminant validity is met.

3. Reliability Test

Table 3. Reliability Test Results

Latent Variables	Cronbach's Alpha	Composite Reliability (CR)	Information
Ease of Access	0.80	0.88	Reliable
Service Speed	0.82	0.89	Reliable
Data Accuracy	0.81	0.89	Reliable
System Convenience	0.83	0.90	Reliable

Based on table 3, it shows all Cronbach's Alpha and Composite Reliability values > 0.7, indicating that the measurement has good internal consistency so that reliability is met. Reliability is tested through Cronbach's Alpha and Composite Reliability (CR). All latent variables have Cronbach's Alpha and CR values above 0.7, indicating that all research instruments have high internal consistency. In other words, respondents provide consistent answers to the indicators used.

4. Simple Linear Regression Test

This study aims to test the effect of the online registration system on outpatient satisfaction at Dr. H. Mohamad Rabain Muara Enim Regional Hospital using a simple linear regression test. Based on the results of the analysis, the following regression model was obtained:

$$Y = \beta_0 + \beta_1 X + \epsilon$$

Where:

- Y is patient satisfaction,
- X is the use of the online registration system,

- β_0 is a constant value (intercept),
- β_1 is the regression coefficient for the independent variable,
- ϵ is the error term.

Based on the results of the regression analysis, the following output was obtained:

Coefficient	Mark	t-Statistic	P-Value
Intercept (β_0)	2.50	4.5	0.000
Registration System (β_1)	0.75	9.2	0.000

R-squared value (R^2) = 0.68. The regression coefficient value for *the online registration system variable* is 0.75. This means that every one unit increase in the online registration system will increase patient satisfaction by 0.75 units. In simple terms, this result shows that a better or more efficient online registration system can significantly increase patient satisfaction. The p-value for the regression coefficient of the online registration system is 0.000, which is smaller than the significance value of 0.05. This indicates that the regression coefficient for the online registration system has a significant effect on patient satisfaction. Thus, we can reject the null hypothesis which states that there is no effect between the online registration system and patient satisfaction. This means that the use of the online registration system does have an effect on the satisfaction of outpatients at Dr. H. Mohamad Rabain Hospital. The R^2 value of 0.68 indicates that the online registration system can explain 68% of the variability in patient satisfaction. This means that the regression model used in this study is good enough to describe the relationship between the use of the online registration system and patient satisfaction levels. However, there is 32% of the variability in patient satisfaction that is influenced by other factors outside this model.

5. Conclusion

The results of the simple linear regression test indicate that the use of an online registration system has a significant positive effect on outpatient satisfaction. With a regression coefficient value of 0.75, it can be concluded that improving the quality and efficiency of the online registration system will increase patient satisfaction. In addition, the R^2 value of 0.68 indicates that this model can explain most of the variation in patient satisfaction, although there are other factors that also affect patient satisfaction that are not included in this model. This study provides important implications for hospitals to continue optimizing the online registration system, so that it can improve patient satisfaction in the medical service process. Improving the registration system to be faster, more accurate, and more accessible will have a positive impact on the outpatient experience at Dr. H. Mohamad Rabain Muara Enim Regional Hospital. The study also recommends developing a more personalized and adaptive online registration system to patient needs, for example through appointment reminder features, integration with electronic medical records, and user-friendly interfaces for different demographic groups, including elderly patients or those with limited digital literacy.

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