

Evaluation of The User Experience of A Healthtech Application And Its Impact on Patient Satisfaction

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Abstract

The digital transformation in healthcare services has increased the role of HealthTech applications in enhancing efficiency and patient satisfaction. However, adoption remains challenging due to suboptimal user experience. This study examines the user experience of HealthTech applications and its impact on patient satisfaction at Ayu Siwi Eye Clinic, Nganjuk. This quantitative research adopts a case study design, collecting primary data through questionnaires from 30 employees and 30 patients, while secondary data were sourced from patient satisfaction forms and relevant documents. Simple random sampling was applied, and data were analyzed using SPSS, including descriptive analysis, validity and reliability tests, simple regression, and classical assumption tests. Findings reveal a significant relationship ($p = 0.034$) between user experience and patient satisfaction, where better user experience characterized by ease of use, usability, and effectiveness correlates with higher satisfaction. The R-squared value (0.151) indicates that user experience explains 15.1% of patient satisfaction variance, with other factors influencing the rest. To improve satisfaction, Ayu Siwi Eye Clinic should refine application design and provide regular staff training. This study underscores the importance of user experience in HealthTech adoption, recommending future research to increase the sample size and explore additional variables like digital literacy and social media influence.

Keywords : HealthTech, user experience, patient satisfaction

INTRODUCTION

In recent years, Indonesia's healthcare sector has encountered numerous challenges in enhancing service quality and maintaining patient loyalty. A report from the Indonesian Ministry of Health (2023) indicates that approximately 70% of patients express satisfaction with the services they receive. However, key issues such as long waiting times and limited accessibility remain primary contributors to patient dissatisfaction (Panggabean & Suharjo, 2023). Additionally, research by (Drury & Lazuardi, 2021) highlights that the uneven distribution of healthcare professionals, particularly in rural areas, has resulted in disparities in access to quality healthcare services. With the advancement of digitalization, HealthTech has emerged as a promising solution to improve healthcare efficiency and patient experiences (Futri & Naruetharadhol, 2025).

The rapid development of technology has led to the rise of HealthTech startups, which offer innovative solutions to improve healthcare services for both patients and medical professionals (Indrajaya & Agristina, 2023). Platforms such as Halodoc and Alodokter have facilitated faster medical consultations and improved patient access to health information. Despite these advancements, the adoption rate of digital healthcare applications in Indonesia remains relatively low, with only 8.9% of the population actively using telemedicine services (Indrajaya & Agristina, 2023). Several barriers hinder this adoption, including low digital literacy among patients, suboptimal user experiences, and resistance from healthcare providers toward technological advancements (Klein & Koesters, 2025; Toben et al., 2025).

Ayu Siwi Eye Clinic, a private eye clinic located in Nganjuk Regency, is striving to implement HealthTech to enhance operational efficiency and patient satisfaction. The clinic has partnered with HealthTech startups to integrate digital systems into its services. However, studies

suggest that the success of technology implementation in healthcare is highly dependent on the competency of medical staff in utilizing the system and ensuring a seamless user experience for patients (Arruum et al., 2024). Research by (Colecchia et al., 2025) also reveals that one of the major obstacles in adopting digital technology in healthcare services is the lack of proper training for medical personnel in operating new digital systems. Additionally, factors such as application interface design, ease of navigation, and transparency in health information significantly influence patient satisfaction with digital healthcare services (Gonzalez-Perez & Ramos-Remus, 2025).

Several previous studies have examined the relationship between HealthTech adoption and patient satisfaction. (Paramita & Noviarisanti, 2024) found that factors such as service speed, ease of application navigation, and the quality of medical information play a crucial role in enhancing patient satisfaction with telemedicine applications. Similarly, research by (Afandi & Arini, 2024) suggests that patient perceptions of digital service quality are closely linked to their loyalty to clinics or hospitals that implement these technologies. However, there remains a research gap regarding how the user experience of HealthTech applications influences patient loyalty in private clinics located in non-urban areas such as Nganjuk (Alshammari et al., 2025).

Given this background, this study aims to assess the user experience of HealthTech applications at Ayu Siwi Eye Clinic and evaluate their impact on patient satisfaction. The findings of this study are expected to provide strategic recommendations for the clinic in enhancing medical personnel competency, optimizing technology implementation, and improving patient loyalty in the digital era. From a theoretical perspective, this research will contribute to a deeper understanding of the factors influencing HealthTech adoption in Indonesia. Practically, the results will serve as a reference for clinics and HealthTech providers in developing more effective services tailored to patient needs (Romancenco, 2025).

RESEARCH METHOD

This study adopts a quantitative approach with a case study design, conducted at Ayu Siwi Eye Clinic in Nganjuk from October to December 2024. Data collection is carried out using two main sources: primary and secondary data. Primary data is gathered through questionnaires administered to 30 employees and 30 patients, while secondary data consists of patient satisfaction records and document analysis related to service quality and the adoption of HealthTech applications at the clinic.

The selection of respondents follows a simple random sampling technique to ensure an objective representation of the population. Given that Ayu Siwi Eye Clinic has a limited number of employees and patients, the sample size accounts for approximately 30-60% of total employees and 15-30% of active patients during the study period. According to (Proost & Segers, 2024), the Central Limit Theorem (CLT) suggests that for sample sizes $n \geq 30$, the distribution of the sample approaches normality, enabling the application of parametric statistical methods such as regression analysis and classical assumption tests.

Additionally, (Malik, 2024) highlights that in quantitative research with a limited sample, a sample range of 20-50 respondents per category is often considered sufficient for analyzing relationships between variables in exploratory studies. In line with this, the chosen sample size meets the established standard, ensuring the validity of the findings and their suitability for statistical analysis. To minimize selection bias and improve population representativeness, respondents were selected randomly using the simple random sampling method (Frame, 2024).

The measurement of user experience with HealthTech applications is assessed based on ease of use, feature usability, and application effectiveness, whereas patient satisfaction is evaluated through medical services, non-medical services, and overall patient satisfaction. For data analysis, SPSS version 18 is utilized, incorporating descriptive analysis, validity and reliability tests, simple regression analysis, and classical assumption tests, including normality, multicollinearity, and heteroscedasticity tests. These analytical methods are employed to examine the relationship between HealthTech user experience and patient satisfaction levels at the clinic.

RESULTS AND DISCUSSIONS

This study presents a comprehensive and systematic analysis of the data, exploring in depth the evaluation of the user experience of the HealthTech app and its significant impact on patient satisfaction at the Ayu Siwi Eye Clinic, Nganjuk. The analysis includes a detailed review of various aspects of the user experience, ranging from ease of use and usability of the app to satisfaction with the interface and its effectiveness in a healthcare context. The resulting findings provide a clear and structured understanding of how user experience influences patient perceptions of the quality of service provided, with a particular focus on the case study of the Mata Ayu Siwi Eye Clinic, Nganjuk.

Table 1. Normality Test Result

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		30
Normal Parameters ^{a,b}	Mean	.00
	Std. Deviation	1.554
Most Extreme Differences	Absolute	.129
	Positive	.129
	Negative	-.066
Kolmogorov-Smirnov Z		.708
Asymp. Sig. (2-tailed)		.699
a. Test distribution is Normal.		
b. Calculated from data.		

Based on table 1 of the normality test results show that the Asymp. Sig. (2-tailed) value is 0.699. Because this value is greater than 0.05, it can be concluded that the data is normally distributed.

Table 2. Multicollinearity Test Result

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	User_Experience_of_a_Health_Tech_Application	1.000	1.000
a. Dependent Variable: Patient_Satisfaction			

Based on table 2 of the multicollinearity test analysis, it shows that the employee satisfaction variable has a tolerance value > 0.1 , or 10%, and a VIF value < 10 . This finding indicates that there are no multicollinearity symptoms in this regression model, so the data is considered good and ready to be used in further testing.

Table 3. Heteroscedasticity Test Results

Coefficients ^a					
Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	1.209	.677	1.784	.085

	User_Experience_of_a_HealthTech_Application	.005	.035	.028	.148	.883
a. Dependent Variable: Patient_Satisfaction						

The heteroscedasticity test results listed in Table 3 show a significance value of 0.883, which exceeds the 0.05 limit. Thus, the assumption of homoscedasticity is met, and it can be concluded that the regression model used in this study is valid and does not experience heteroscedasticity problems.

Table 4. Simple Linear Regression Test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	33.010	1.306		25.272	.000
	User_Experience_of_a_HealthTech_Application	-.153	.068	-.389	-2.232	.034
a. Dependent Variable: Patient_Satisfaction						

The results of the simple linear regression test show that the constant value (intercept) is 33.010, which means that when the user experience is at the starting point, patient satisfaction is estimated to be at a value of 33.010. The coefficient of the HealthTech app user experience variable is -0.153, which means that for every one unit increase in user experience (which in this case seems to indicate an increase in problems or difficulties in using the app), patient satisfaction decreases by 0.153 units. In other words, the more problems or obstacles users experience in using the application, the lower the level of patient satisfaction.

Table 5. F-Test (Simultaneous)

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.467	1	12.467	4.981	.034 ^a
	Residual	70.076	28	2.503		
	Total	82.543	29			
a. Predictors: (Constant), User_Experience_of_the_HealthTech_app						
b. Dependent Variable: Patient_satisfaction						

The results of the F (simultaneous) statistical test in the ANOVA table show a significance value (Sig.) of 0.034. From this comparison, we can see that the significance value (0.034) is smaller than the significance level (0.05). Therefore, we can conclude that the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted. Thus, it can be concluded that there is a significant influence simultaneously (together) between the independent variable (HealthTech application user experience) on the dependent variable (patient satisfaction) at Ayu Siwi Eye Clinic, Nganjuk.

Table 6. Deterministic Test (R^2)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.389 ^a	.151	.121	1.582
a. Predictors: (Constant), User_Experience_of_the_HealthTech_app				

Based on the results of the determination test (R^2) in the study to evaluate the user experience of the HealthTech application and its impact on patient satisfaction at the Ayu Siwi Eye Clinic, Nganjuk, an R square value of 0.151 was obtained, indicating that about 15.1% of the variation in patient satisfaction can be explained by the effect of the user experience of the HealthTech application. This means that decreases in patient satisfaction can be attributed to changes in the user experience of the HealthTech application, especially increases that indicate an increasingly poor experience, such as difficulty of use. There is 84.9% of the variation in patient satisfaction that cannot be explained by the user experience of the HealthTech app in this regression model. Other factors were not considered in this study.

The adjusted R-squared value of the HealthTech application user experience research and its impact on patient satisfaction at the Ayu Siwi Eye Clinic, Nganjuk found that the adjusted R-squared value was 0.121 or 12.1%. These results indicate that the regression model that includes the HealthTech application user experience variable is good enough to explain variations in patient satisfaction. However, the lower value compared to the R-squared indicates that the addition of independent variables has more realistically accounted for the complexity of the model, with approximately 12.1% of the variation in patient satisfaction explained by the HealthTech application user experience. The remaining 87.9% reflects other factors not included in this study.

CONCLUSION

This study confirms a significant relationship between user experience and patient satisfaction in the use of HealthTech applications at Ayu Siwi Eye Clinic, Nganjuk ($p = 0.034$). A positive user experience, characterized by intuitive navigation, effective features, and a user-friendly interface, enhances patient satisfaction. Conversely, challenges such as complex features and slow application responsiveness can negatively impact patient perceptions. The R-squared value of 0.151 indicates that 15.1% of patient satisfaction variation can be explained by user experience, while other factors remain unexamined. The findings align with previous research highlighting the critical role of user experience in improving patient satisfaction and loyalty in digital healthcare services.

SUGGESTIONS

To enhance patient satisfaction, clinics should prioritize user-friendly application development and provide adequate training for healthcare professionals to optimize application usage. Routine evaluation of application performance and patient feedback collection are essential for refining the user experience and improving digital healthcare services. The integration of artificial intelligence could further personalize services and enhance patient interactions with digital healthcare platforms. Future research should expand the study scope by including a larger sample and respondents from diverse regions to provide a more comprehensive understanding of HealthTech adoption. A mixed-method approach, incorporating in-depth interviews, could offer deeper insights into factors influencing patient satisfaction. Additionally, further studies should explore the impact of psychosocial factors and patients' digital literacy on HealthTech adoption.

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