

Analysis of mobile JKN application utility acceptance on behavioral intention of BPJS Kesehatan participants in Minasate'ne primary health center using the unified theory of acceptance and use of technology (UTAUT)

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Abstract. The development of digital technology in the healthcare sector has become a key factor in promoting efficiency and improving the quality of public services. One of the innovations introduced by BPJS Kesehatan to support digital transformation is the Mobile JKN application. This study aims to analyze the influence of four core constructs from the Unified Theory of Acceptance and Use of Technology (UTAUT) model—performance expectancy, effort expectancy, social influence, and facilitating conditions—on behavioral intention in using the Mobile JKN application, as well as to examine the statistical significance of each variable's effect. This research adopts a quantitative explanatory approach using multiple linear regression analysis. The sample was selected through a total sampling technique based on Mobile JKN users at the Minasate'ne Public Health Center in June, involving 67 respondents. The results indicate that performance expectancy, effort expectancy, and social influence have a significant effect on behavioral intention ($p < 0.05$), while facilitating conditions do not show a significant effect ($p > 0.05$). Simultaneously, all four variables significantly influence behavioral intention, with an R^2 value of 0.785. It is concluded that performance expectancy, effort expectancy, and social influence are significant factors influencing individuals' intentions to use the Mobile JKN application, whereas facilitating conditions are not significant in this research context.

1. Introduction

The development of digital technology in the public service sector is now a major focus for driving improvements in the efficiency and quality of services provided to the community.

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BPJS Kesehatan continues to strive to improve services for all BPJS Kesehatan participants. One form of innovation produced by the Social Security Administration Agency (BPJS) Kesehatan is the development of the Mobile JKN application, a digital platform that aims to facilitate health services for National Health Insurance (JKN) participants by making it easier to access various services online. Mobile JKN can be accessed by downloading the application through the Google Play Store or Apple Store. After downloading, participants are required to register through the menu provided. Once registered, the application can be used immediately to access various features[1] Some of the features offered include JKN program information, membership information, service registration (queue), rehabilitation (installment of outstanding contributions), data changes, contribution information, health information, and several other features. Through this application, participants can carry out various activities without having to come directly to the BPJS Kesehatan office or health facilities. [2] Even though technological innovations are emerging, their acceptance by the public does not always happen instantly, as it requires a process of adaptation and a considerable amount of time. Therefore, the success of implementing a technology is greatly influenced by user aspects, particularly related to the individual's intention to adopt and use the technology.

Primary Health Care (FKTP) is non-specialized (primary) individual health care covering outpatient and inpatient services provided by Primary Health Care Facilities (FKTP), which consist of: Community Health Centers (Puskesmas) or equivalent, Independent Medical Practices, Independent Dental Practices, Primary Clinics or equivalent, including Primary Health Care Facilities (FKTP) owned by the Indonesian National Armed Forces (TNI) and the Indonesian National Police (Polri); Class D Primary Hospitals or equivalent, as well as supporting health facilities such as pharmacies and laboratories. Based on data from BPJS Kesehatan, there are 23,497 FKTPs in Indonesia that have collaborated with BPJS Kesehatan, with community health centers accounting for 43.1%.[3] Referring to data from the Central Statistics Agency (BPS) of Pangkajene and Kepulauan Regency in 2022, there are 2 hospitals located in Pangkajene and Labakkang Districts. In addition, there are 23 community health centers, 6 clinics or health centers, and 385 integrated health service posts (posyandu) spread across various districts in the region. Data from the South Sulawesi Province BPS in 2023 shows that the percentage of the population with health insurance according to the type of BPJS insurance is 62.86% for recipients of contribution assistance (PBI), 18.69% for non-PBI participants, and the rest are private insurance and company/office insurance.[4] Based on preliminary study data from the Pangkep District BPJS Health Office in Miansate'ne District in Juni 2025, the number of JKN participants was 25,061 active users.

Based on medical record data at the Minasate'ne Community Health Center, the number of visits in the last 3 months (May-July) in 2025 was 6,824 visits, with 6,708 visits registered directly and 116 visits registered online using the JKN mobile app. This indicates that the utilization of the JKN mobile app in the Minasate'ne sub-district health center area is still very low.

Along with the rapid development and utilization of health applications, it is important to evaluate user readiness so that the services provided can be accessed optimally. This evaluation aims to identify factors that healthcare providers should pay attention to in the process of developing and improving applications. By knowing these factors, providers can tailor their services to the needs of users. Conversely, without an assessment of readiness, users may not be able to utilize the application to its full potential, so that the services offered are not fully felt to be beneficial or useful.[5]

Research conducted by Wahyudi et al. (2022) found an interesting fact that respondents who perceived the JKN mobile application as easy to use did not intend to use the JKN mobile application before they believed that the JKN mobile application was useful

for them. This often happens when participants receive information about the JKN mobile application but do not immediately download and use the JKN mobile application even though they already understand how to use it.[6]

Despite offering various practical features that support digital-based health services, the utilization rate of Mobile JKN among JKN participants is still relatively low. This minimal usage is thought to be caused by a number of factors, including low digital literacy, public perception of the application's usefulness, ease of use, and the influence of a social environment that does not fully support the adoption of this technology.

One of the reasons for the low interest among participants in using the Mobile JKN application is the assumption that the application is not useful if they do not need health services.[7], [8] In fact, the Mobile JKN application offers various benefits even for participants who are in good health, such as access to health information and news, updates related to JKN-KIS, health screening features, membership status checks, and several other services. If there is a discrepancy in the data, for example in the participant's identity, then corrections need to be made immediately before the participant requires health services, because inaccurate data can be an obstacle in obtaining services. These data changes can be made directly through the JKN mobile application without having to visit the BPJS office, making it more efficient in terms of time and allowing optimal access to health services..

The Unified Theory of Acceptance and Use of Technology (UTAUT) model was developed to explain how individual behavior is formed in the use of information technology (Venkatesh et al., 2003). UTAUT is a model in the context of this study, focusing on the use of JKN mobile health technology applications.[9] This model is the result of the integration of eight previous theories that have been proven relevant in the context of technology adoption. The UTAUT model states that a person's intention to use technology (behavioral intention) is influenced by four main constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions. This model has been widely adopted in various empirical studies, producing varying findings depending on the context of its users.[10]

The UTAUT model is able to explain approximately 70% of the variables that influence behavioral intention in technology use, as well as about 50% of the variables that influence actual usage behavior. This model was developed to understand the process of technology adoption from the user's perspective[11] The selection of the UTAUT model in this study was based on its widespread use in studies on technology acceptance and use. Through this model, the factors that influence the factor's intention can be analyzed in depth. [12]

The UTAUT model was chosen because it is one of the most widely used theories to explain the process of technology adoption at both the organizational and individual levels. The integration of UTAUT in this study is expected to broaden the understanding of the factors that influence the intention to use the JKN mobile application, while enriching the literature related to technology acceptance in the context of easy access to health services.

Based on the above problem description, this study will discuss the influence of the UTAUT model, namely performance expectancy, effort expectancy, social influence, and facilitating conditions, on the acceptance of JKN mobile application use among patients visiting the Minasate'ne Community Health Center in Pangkep Regency.

2. Methods

This study is quantitative research using an explanatory quantitative method with an emphasis on determining the influence between variables and the statistical significance of this influence. The population in this study was all BPJS participants who used the JKN mobile app in the Minasate'ne Community Health Center area. Sampling was conducted using total sampling technique, referring to the data on visits in June at the Minasate'ne Community Health Center who registered online using the JKN mobile application, totaling

67 respondents. Data collection was carried out by distributing questionnaires that had previously undergone validity and reliability tests by taking a sample of 30 people.

Measurements were conducted using questions in a questionnaire representing each variable, which were answered on a Likert scale ranging from 1 to 5, with responses ranging from Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, and Strongly Agree = 5. This study adopted the Unified Facilitating Condition Social Influence Behavioral Intention Effort Expectancy Performance Expectancy Theory of Acceptance and Use of Technology (UTAUT) model developed by Venkatesh et al. (2003).

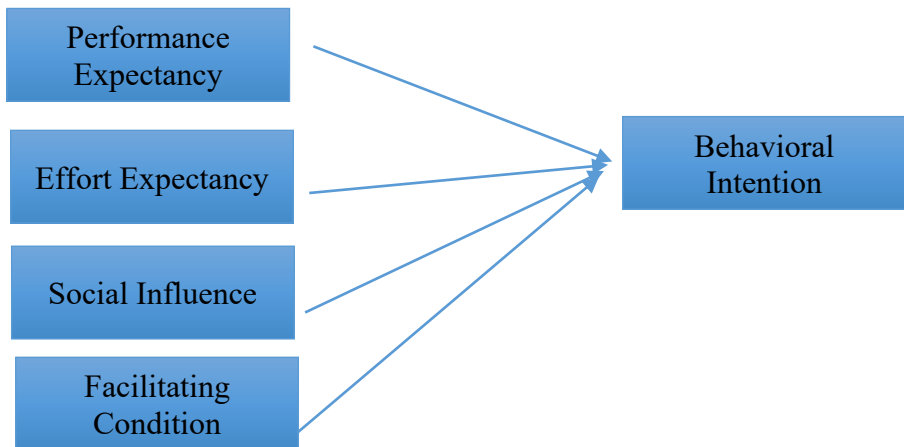


Figure 1. UTAUT Model (Venkatesh, 2003)

The data in this study were analyzed using SPSS software. The data analysis methods applied included univariate analysis and multivariate analysis. Univariate analysis was used to describe the characteristics of the respondents, while multivariate analysis was used to assess the simultaneous effect of more than one independent variable on one dependent variable, as well as to identify the variables that had the most dominant effect using multiple linear regression analysis.

Before performing multiple linear regression, classical assumption tests were first conducted to ensure that the regression model used met the eligibility criteria. The classical assumption tests performed included normality tests, multicollinearity tests, and heteroscedasticity tests. Furthermore, to measure the extent to which independent variables influenced the dependent variable, several statistical tests were performed, namely:

1. Partial test (t-test) to determine the effect of each independent variable on the dependent variable individually.
2. Simultaneous test (F test) to evaluate the combined effect of independent variables on the dependent variable.
3. The coefficient of determination (R^2) was used to measure the extent to which all independent variables contributed to explaining the variation in the dependent variable.

3. Results and Discussion

3.1. Respondent Characteristics

This study involved 67 respondents with several characteristics, including gender, occupation, type of membership, and age

No.	Characteristics	Category	(n)	(%)
1	Gender	Male	15	22.4%
		Female	52	77.6%
Total			67	100%
2	Occupation	PNS	1	1.5%
		Private Sector Employee	6	9,0%
		Farmers	9	13.4%
		Housewives	38	56.7%
		Other	13	19.4%
Total			67	100%
3	Type of member	PBI	47	70.1%
		Non PBI	20	29.9%
Total			67	100%
4	Age	Young	13	19,4%
		Adult	42	62.7%
		Elderly	12	17.9%
Total			67	100%

Based on Table 1, there were 15 male respondents (22.4%) and 52 female respondents (77.6%). In terms of occupation, 56.7% of respondents were housewives. This condition illustrates that the use of online registration using the JKN mobile app is more dominant among women. The majority of respondents had BPJS PBI membership at 70.1%. The age categories used according to the Ministry of Health (Kemenkes) are divided into three levels: young (15-34 years), adult (35-54 years), and elderly (>55 years). The majority of respondents were in the adult age category, with a percentage of 62.7%.

3.2. Result of Classical Assumption Tests

a. Normality Test

The normality test was conducted to evaluate whether the residual values in the regression model were normally distributed. The results of this test in the study were used as evidence that the model met one of the classical assumption requirements, so that the t and f tests could be carried out validly. The normality test was conducted using the One Sample Kolmogrov-Smirnov Test method. The following are the results of the normality test conducted:

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual	
N		67	
Normal Parameters ^{a,b}	Mean	.0000000	
	Std. Deviation	1.21701858	
Most Extreme Differences	Absolute	.091	
	Positive	.091	
	Negative	-.088	
Test Statistic		.091	
Asymp. Sig. (2-tailed) ^c		.200 ^d	
Monte Carlo Sig. (2-tailed) ^e	Sig.	.175	
	99% Confidence Interval	Lower Bound	.165
		Upper Bound	.185

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.
- d. This is a lower bound of the true significance.
- e. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 2000000.

The test results show an Asymp Sig value of 0.200 (p-value>0.05), so it can be concluded that the residuals are normally distributed. Thus, the normality assumption in the classical assumption test is fulfilled.

b. Multicollinearity test

The multicollinearity test was conducted to determine whether there was a high linear relationship between the independent variables in the regression model. Multicollinearity occurs when two or more independent variables are strongly correlated. This condition can interfere with the estimation of regression coefficients because the model has difficulty distinguishing the effect of each independent variable on the dependent variable.

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
Personal Expectancy	.217	4.608
Effort Expectancy	.246	4.060
Social Influence	.418	2.392
Facilitating Condition	.165	6.043

The results of the multicollinearity test show that each independent variable has a tolerance value exceeding 0.10 and a VIF value below 10. This confirms that there is No. indication of multicollinearity, so the regression model can be declared to meet the classical assumption of multicollinearity freedom.

c. Heteroscedasticity Test

The heteroscedasticity test was conducted to determine whether the residual variance in the regression model was constant or not at each independent variable value so that the parameter estimation would be efficient and unbiased.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.354	.539		2.512	.015
	Performance Expectancy	.057	.065	.208	.866	.390
	Effort Expectancy	.032	.076	.097	.421	.675
	Social Influence	-.165	.056	-.530	-2.952	.006
	Facilitating Condition	.004	.080	.012	.044	.965

a. Dependent Variable: ABS

Based on the table above, all independent variables have a significance value (p-value) greater than 0.05. This indicates that there is no evidence of heteroscedasticity in the regression model used. Thus, the model meets the classical assumption of homoscedasticity, allowing it to be used for further analysis without bias due to heteroscedasticity.

3.3. Multiple Linear Regression

a. Significance Test (T-Test)

The partial test or t-test is used to test the partial effect of each independent variable on the dependent variable with the aim of determining whether an independent variable (X) significantly affects the dependent variable (Y). The test tool used is to look at the t-count value or Sig. (p-value) in the Coefficients table in the SPSS output.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	3.065	.910		.001
	Performance Expectancy	.322	.110	.357	.005
	Effort Expectancy	.346	.129	.314	.009
	Social Influence	.263	.094	.254	.007
	Facilitating Condition	.063	.136	.065	.645

The results of this study indicate that the performance expectancy variable has a significance value of $0.005 < 0.05$, which means that performance expectancy has a significant positive effect on behavioral intention. This means that the greater the benefits obtained from using the JKN mobile application, the greater the intention to use JKN mobile in daily life. This is in line with the research conducted by Hiswara Abrar (2017) that the performance expectancy variable has a positive effect on the intention to use the JKN mobile application in obtaining health services. [13], [14] In contrast, research conducted by Bhramahyuda (2024) explains that performance expectancy does not have a significant effect on behavioral intention, which means that the perceived benefits obtained are not strong enough to encourage users to intend to use the application.[8]

Effort expectancy has a significance value of $0.009 < 0.05$, which means that effort expectancy has a significant influence on intention behavior in a positive direction, meaning

that the easier it is for someone to use the application, the higher their intention to continue using the application in their daily life. Conversely, the lower the level of ease a person experiences in using the application, the lower their intention to use the application in their daily life. The lack of ease, such as limited features and system disruptions in the use of technology, is one of the main factors causing low public intention to utilize technology that is considered new to them.[15] This is in line with research conducted by Dedy Samsuar (2022) that effort expectancy has a positive influence on a person's intention to use mobile JKN.

Social influence has a significance value of $0.007 < 0.05$, which means that it has a significant effect on behavioral intention in a positive direction, meaning that the higher the trust in the influence of those closest to them to use the application, the higher a person's intention to use the application. This is in line with research conducted by Anjani Widya et al., which confirms that social influence has an important contribution in encouraging users' interest in adopting digital public service applications. In this case, it shows that recommendations and opinions from close friends and family, which are considered important, can actually encourage someone to intend to use the application for their future needs.

Conversely, the facilitating condition variable does not have a significant effect on behavioral intention with a sig value of $0.645 > 0.05$. This is in line with research conducted by Akbar et al., which states that facilitating conditions do not have a significant effect on application usage, while performance expectancy, effort expectancy, and social influence have a positive effect on a person's behavioral intention to use the application.

These findings are consistent with the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh et al., which states that performance expectancy, effort expectancy, and social influence are the main determinants that influence a person's intention to use technology. In this theory, facilitating conditions do not directly influence behavioral intention, but rather have a greater effect on actual usage behavior, especially in the context of technology adoption that is still new or not yet fully used routinely by users [10].

Research conducted by Wulandari on the adoption of mobile banking applications shows that performance expectancy and effort expectancy have a positive and significant effect on behavioral intention. In digital health services such as Mobile JKN, performance expectancy reflects patients' belief that using the application can facilitate the registration process, save time, and speed up service delivery compared to conventional registration methods. Theoretically, the stronger the perception that technology facilitates service delivery, the higher a person's intention (behavioral intention) to use the application.

Meta-studies and context reviews show that performance expectancy is often a dominant factor in influencing the intention to use technology (behavioral intention). Conversely, facilitating conditions are more often proven to influence actual usage behavior rather than the intention to use.

Based on partial testing, the facilitating condition variable does not have a significant effect on a person's intention to use the JKN mobile app. The results of this study indicate that facilitating conditions such as the availability of resources (gadgets, networks, etc.), knowledge, support, and expert assistance in using the JKN mobile app do not influence a person's intention to use the app. This can be attributed to limited facilities and a lack of assistance felt during the initial stages of adopting new technology. do not influence a person's intention to use the application. This can be attributed to limited facilities and a lack of assistance felt in the early stages of adopting new technology. Users may face difficulties in utilizing the application, thereby not fully realizing its benefits. This is in line with research conducted by Pratama, et.al that facilitating conditions do not significantly affect behavioral intention in the use of mobile JKN.

Meanwhile, Saputra et al. found that facilitating conditions did not have a significant effect on behavioral intention in the context of initial use of digital health applications, because users were not yet fully familiar with the available features and technical support. This condition occurs because some users consider the application to be difficult to use. However, health services, especially during registration, can still be accessed by visiting the hospital directly, so the benefits offered are not considered sufficient to encourage someone to use the JKN mobile application.

Thus, the results of this study reinforce the validity of the UTAUT model in the context of Mobile JKN usage and highlight the importance of considering factors such as performance expectancy, effort expectancy, social influence, and facilitating conditions in increasing users' intentions to utilize digital health services.

This indicates that there is a need for continuous and comprehensive socialization to the public regarding the use and benefits of the JKN mobile application. In terms of the application, there needs to be an improvement in the quality of the display and features in order to increase user interest.

In the context of the JKN mobile utility, it is emphasized that increasing user behavior is highly dependent on positive experiences and favorable attitudes toward the application. These efforts can be realized through the development of more optimal features, ease of access to services, and the provision of adequate technical support. Therefore, a positive attitude towards the JKN mobile app not only serves as a reflection of the intention to use the application, but also as a strategic factor that plays a role in expanding the level of adoption in using the application in the community.

b. Simultaneous Test (F test)

The F test or simultaneous test in research aims to test whether all independent variables together have a significant effect on the dependent variable in a regression model. The results of data processing for the simultaneous test (F test) using SPSS 30 are presented in the following table:

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	357.230	4	89.308	56.642	<.001 ^b
	Residual	97.755	62	1.577		
	Total	454.985	66			

a. Dependent Variable: *Behavioral Intention*

b. Predictors: (Constant), *Facilitating Condition, Social Influence, Effort Expectancy, Performance Expectancy*

From the results in the table above, the F-value is 56.642 and the sig value is $0.001 < 0.05$. All independent variables together have a significant effect on the dependent variable. Therefore, the regression model is suitable for further analysis. This is in line with the research conducted by Hiswara Abrar, et al. that the five variables of performance expectancy, effort expectancy, social influence, facilitating conditions, and design interface together influence behavior intention [13]. Nyesiga Catherine B indicates that performance expectancy, effort expectancy, social influence, and facilitating conditions have the ability to influence behavioral intention to use technology.

Research conducted by Chandra et al. confirms that the intention to adopt digital technology is mainly determined by performance expectancy and effort expectancy, with performance expectancy as the strongest/most dominant indicator. However, the combination of performance expectancy, effort expectancy, social influence, and facilitating conditions together still has a significant influence on behavioral intention.

Thus, to encourage an increase in the intention to use the JKN mobile application, it is hoped that application developers and related parties will highlight the benefits of the application as a means of easy access to services by focusing on performance quality and user experience as well as socialization related to several features or benefits obtained.

The development of digital technology, especially in the health sector, is designed according to user needs, is easy to use, easy to understand, provides complete, up-to-date, and relevant information, and is supported by adequate technical services. This will encourage users' interest or intention to continue using it and ultimately increase their productivity.

c. Coefficient of determination Test result

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.886 ^a	.785	.771	1.256

a. Predictors: (Constant), *Facilitating Condition, Social Influence, Effort Expectancy, Performance Expectancy*

b. Dependent Variable: *Behavioral Intention*

R Square value of 0.785, meaning that 78.5% of the independent variables, namely performance expectancy, effort expectancy, social influence, and facilitating condition, contribute to the dependent variable, while the rest is influenced by other variables. Research conducted by Pratama modified the Unified Theory of Acceptance and Use of Technology (UTAUT) framework by adding the variable of satisfaction. The results of this study show that Social Influence (SI), Trust (T), and Satisfaction (S) have a direct and significant influence on the intention to use Mobile JKN.

Research conducted by Alhadid et al. [14] revealed that performance expectancy, effort expectancy, social influence, facilitating conditions, trust, and perception of digital service quality are proven to be important factors that influence respondents' attitudes toward using applications. The relationship between these variables is influenced by moderating factors, such as age, gender, education level, and application usage experience, on behavioral intention.

4. Conclusion

Performance expectancy, effort expectancy, and social influence are significant factors in shaping individuals' intentions to use the Mobile JKN application, whereas facilitating conditions do not have a significant effect in the context of this study. Performance expectancy, effort expectancy, social influence, and facilitating conditions collectively have a significant influence on individuals' intention to use Mobile JKN. Furthermore, performance expectancy, effort expectancy, social influence, and facilitating conditions contribute 78.5% to influencing individuals' intention to use Mobile JKN, while the remaining percentage is influenced by other factors outside the variables examined in this study.

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