

Analysis of User Acceptance of the Mobile Application of National Health Insurance Using the UTAUT Model

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Abstract

Development technology in the field health own positive impact. On the field Health services are available developed mobile applications Forgive Health services to public by online. The Mobile JKN Application has objective For give service health to community and make it easier power health For give service optimally. On research This analyze about reception user The Mobile JKN application uses the Unified Theory of Acceptance and Use of Technology (UTAUT). Respondent data obtained during spread questionnaire that is as many as 110 respondents. Respondent data Then analyzed using Structural Equation Model (SEM) research results This show that Performance Expectancy (PE) and Social Influence (SI) have an influence significant to Behavioral Intention (BI). However, for Effort Expectancy (EE) it is not influential significant to Behavioral Intention (BI) with t-test values are 2.224, 2.224, and 1.198 respectively. Third variable the can explain influence to Behavioral Intention (BI) was 34.3%. Whereas for Facilitating Conditions (FC) and Behavioral Intention (BI) influence significant towards Use Behavior (UB) with t-test values are 4.013 and 5.636 respectively. As well as second variable the can explain influence on Use Behavior (UB) of 59.3%. So on research explain reception user to use Mobile JKN application with using UTAUT.

Introduction

In development fast technology until moment this, a lot developed mobile or android applications For help daily man. With development technology on *mobile* on *smartphones*, services running information until moment This must can give development mobile technology for makes it easier its users (Juniar et al., 2023). Development technology is also felt in the field service health. Use service health based technology give convenience to public in matter service, treatment, and improvement support social as well as various support to other people (Bhatia, 2021; Sen et al., 2022). So that public capable in a way independent disseminate experience positive they about change more behavior healthy and knowledgeable about disease, treatment, change body, effect side disease as well as impact positive from apply style life healthy, consultation health with the doctors or specialist, and search information about organizer service health through consultation *on line* (Jiang et al., 2021; Bujnowska-Fedak & Węgierek, 2020).

Application *mobile* is device software that works For increase functional from device the with download required applications (Jainuri et al., 2021; Abolfazli et al., 2014; Preuss, 2012). On the field Health services are available developed mobile applications For give Health services to public in a way *on line* (Qiang et al., 2011; Silva et al., 2015). The Mobile JKN Application

is development BPJS Health mobile application that has objective For give service health to community and make it easier power health For give service optimally (Ramadani et al., 2023; Ridiarsih et al., 2024). The Mobile JKN Application makes it easy its users For do activity administrative like online registration as well access other related information membership, bills, facilities reference level continue anywhere and anytime course, as well makes it easier Mobile JKN users for provide suggestions or complaint (Herlinawati et al., 2021; Putra, 2022).

However based on review Mobile JKN application on Google Playstore for users experience problem in use application the (Wajdi et al., 2024; Kustanto et al., 2021). Mobile JKN users experience a number of problem among them that is No can log in to Mobile JKN application, Mobile JKN application *error* after do *updates* application, no can carry out the registration process initial, application felt heavy and slow, and not can register for the service health.

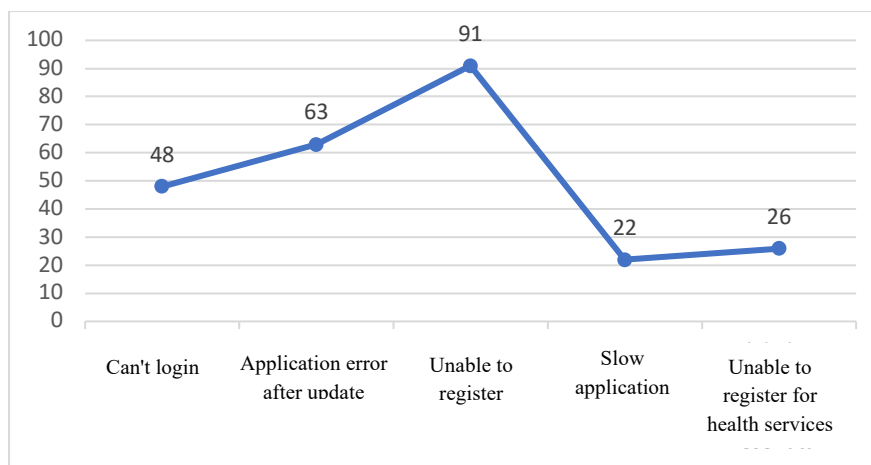


Figure 1. Review Mobile JKN Application on Google Playstore

From problems the researcher take sample beginning as many as 250 reviews on the Mobile JKN application on Google Playstore. From the results sample beginning the received by the most users experience difficulty or No can do registration early at the moment use Mobile JKN application. As well as users Mobile JKN application at the moment use application there is *error* after updating the application. From problems This give rise to worries to continuation application Mobile JKN application in the future especially to reception user. For increase productivity performance, technology must can accepted and used by society as user. current factor This hold role important in success implementation and use technology information is factor user (Gil-Garcia & Flores-Zúñiga, 2020). Level of readiness user For accept technology information own influence big in determine success technology the (Fawwaz et al., 2023; Blut & Wang, 2020). For now level acceptance and whether A system That succeed or Not yet in its implementation so required A analysis to system the. There are many method analysis that can be applied or used For now level success is one of them method that will applied is method or *the Unified Theory of Acceptance and Use of Technology* (UTAUT) model. The UTAUT model has four variant construct that is *Performance Expectancy*, *Effort Expectancy*, *Facilitating Conditions*, and *Social Influence* (Mulyani & Nugraha, 2022; Agyei & Razi, 2022; Alrawashdeh et al., 2020). On research This analyze about reception user Mobile JKN application for BPJS Health participants use the UTAUT model. UTAUT models or *Unified Theory of Acceptance and Use of Technology* is the model used For explain behavior user to something technology information.

Methods

The research employs a quantitative approach to data collection and analysis. Quantitative methods involve various techniques that utilize numerical data, encompassing the entire

process from data collection to data processing and the subsequent analysis of results. In this study, the Structural Equation Model (SEM) is utilized as the primary data processing method, allowing for a robust analysis of relationships between variables. The population under investigation consists of BPJS Health participants residing in the Surabaya and Sidoarjo areas who have either previously used or are currently using the Mobile JKN application. A purposive sampling technique is employed to select participants who meet specific criteria relevant to the study, and data is collected through the distribution of questionnaires.

The operational definitions of the variables in this research are as follows: Performance Expectancy is defined as the extent to which an individual believes that using the system can enhance their work outcomes (Permana & Dewi, 2019). Effort Expectancy refers to the level of ease associated with using the system (Chandra & Novita, 2020). Social Influence is defined as the degree to which individuals perceive that others believe they should use the new system (Syamsuar & Al Reza, 2022). Facilitating Conditions are understood as the extent to which an individual believes that organizational and technical infrastructure exists to support the use of the system. Behavioral Intention is characterized as the individual's intention to engage in a particular behavior when using technology. Finally, Use Behavior is defined as the intensity or frequency with which users engage with information technology.

Table 1. Hypothesis Study

Hypothesis	Description
H1	Performance Expectancy (PE) has a significant effect on Behavioral Intention (BI) in using the Mobile JKN application.
H2	Effort Expectancy (EE) has a significant effect on Behavioral Intention (BI) in using the Mobile JKN application.
H3	Social Influence (SI) has a significant effect on Behavioral Intention (BI) in using the Mobile JKN application.
H4	Facilitating Conditions (FC) have a significant effect on Use Behavior (UB) in using the Mobile JKN application.
H5	Behavioral Intention (BI) has a significant effect on Use Behavior (UB) in using the Mobile JKN application.

Results and Discussion

Questionnaire Data Collection

On research This data collection is carried out with method spread questionnaire with use scale likert as an instrument for respondents and researchers. Questionnaire used shared into two parts main, in part First is demographic data for respondents For give personal data information form Species name gender, age, domicile place stay, and questions about use Mobile JKN application. In section second is question about 6 variables on research with a number of questions in each section. The measurement scale used in questionnaire This is scale *likert* One to five.

Questionnaire on research This spread to respondents who are user Mobile JKN application. Deployment questionnaire done in a way *online* with use Google Form *platform* and social media as a dissemination medium questionnaire. Deployment process questionnaire done for 1 month since June 2024 until respondent data fulfilled. Respondent data obtained during spread questionnaire that is as many as 110 respondents. Information demographics obtained that is covers type gender, age, domicile place stay, and experience use Mobile JKN application.

Table 2. Gender Data Respondent

No	Gender	Amount	Percentage (%)
1	Man	51	46.4
2	Woman	59	53.6
Total		110	100

Source: Questionnaire Data Study

Based on characteristics type sex is known that part big respondents inside study This is Woman that is as many as 59 people with percentage 53.6%. Whereas For respondents men in the study that is as many as 51 people with percentage 46.4%.

Table 3. Age Data Respondent

No	Age	Amount	Percentage (%)
1	18-20 years old	9	8.2
2	21-30 years old	71	64.5
3	31-40 years old	23	20.9
4	>40 years	7	6.4
Total		110	100

Source: Questionnaire Data Study

Based on characteristics age is known that part big respondents inside study This is 18-20 years old that is as many as 9 people with percentage 8.2%. For respondents aged 21-30 years that is as many as 71 people with percentage 64.5%. Whereas For respondents aged 31-40 years in the study that is as many as 23 people with percentage 20.9%. And to aged respondents more of 40 years in research This as many as 7 people with percentage by 6.4%.

Table . Domicile Data Respondent 's Residence

No	Domicile	Amount	Percentage (%)
1	Sidoarjo	61	55.5
2	Surabaya	49	44.5
Total		110	100

Source: Questionnaire Data Study

Based on domicile place stay is known that part big respondents inside study This domiciled in the area Regency Sidoarjo that is as many as 61 people with percentage 55.5%. Whereas For respondents who live in the city of Surabaya in the research that is as many as 49 people with percentage 44.5%.

Table 5. Length of Use f The Application Mobile JKN Application

No	Long Time Using	Amount	Percentage (%)
1	1-3 Months	42	38.2
2	3-9 Months	24	21.8
3	9-12 Months	19	17.3
4	>12 Months	25	22.7
Total		110	100

Source: Questionnaire Data Study

Based on long-term characteristics of use the Mobile JKN application is known that part big respondents inside study This use Mobile JKN application for 1-3 months that is as many as 42 people with percentage 38.2%. For respondents who use Mobile JKN application for 3-9

months that is as many as 24 people with percentage 21.8%. For respondents who use Mobile JKN application for 9-12 months that is as much 19 people with percentage 17.3%. And respondents who use it Mobile JKN application >12 months that is as many as 25 people with percentage 22.7%.

Data processing

processing methods in research This use *Structural Equation Modelling* (SEM). SEM is technique analysis a common and very useful multivariate that includes versions special in amount method analysis other as cases special . SEM has characteristic characteristics as technique analyst For more confirm than For explain c (Mulyadi et al., 2021) .

Analysis Outer Model

Processing questionnaire data in research This use SEM-PLS method with use *software* SmartPLS. In stages the design of the measurement model (*outer model*) is carried out with 4 stages testing that is *Convergent Validity*, *Discriminant Validity*, *Average Validity Extracted*, and *Composite Reliability*. In research This is an indicator pda every latent variables are characteristic reflexive. Following is picture measurement model design (*outer model*).

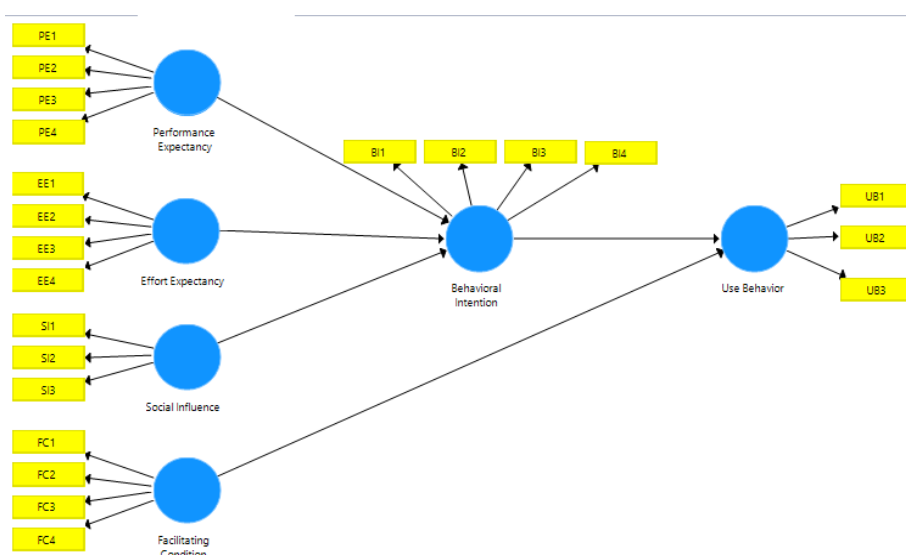


Figure 2. Outer Model

Validity test Convergent

Validity test convergent is testing seen from correlation between score indicator with latent variable. Size individually reflective can said Good if mark *loading factor* > 0.7 and value *Average Variance Extracted* (AVE) > 0.5 (Aurellia & Perdana, 2020). So that obtained results testing on SmartPLS on *outer loading* and *Average Variance Extracted* (AVE).

Table 6. Initial Test Results *Outer Loading* on SmartPLS

Indicator	Loading Factor					
	Behavioral Intention	Effort Expectancy	Facilitating Conditions	Performance Expectancy	Social Influence	Use Behavior
BI1	0.829					
BI2	0.733					
BI3	0.781					
BI4	0.756					
EE1		0.732				

EE2		0.794				
EE3		0.834				
EE4		0.729				
FC1			0.803			
FC2			0.764			
FC3			0.814			
FC4			0.614			
PE1				0.737		
PE2				0.722		
PE3				0.717		
PE4				0.736		
SI1					0.82	
SI2					0.804	
SI3					0.754	
UB1						0.726
UB2						0.794
UB3						0.747

Source: Processed Data

In table the can is known loading factor test results using SmartPLS that there is One indicator namely FC4 which has *loading factor* 0.614. This matter can concluded that FC4 indicator is invalid because For get valid result then mark *loading factors* above 0.7. So that FC4 indicator should be removed and tested repeat For get valid results.

Table 7. Continued Results Testing *Outer Loading* on SmartPLS

Indicator	Loading Factor					
	Behavioral Intention	Effort Expectancy	Facilitating Conditions	Performance Expectancy	Social Influence	Use Behavior
BI1	0.829					
BI2	0.733					
BI3	0.781					
BI4	0.756					
EE1		0.732				
EE2		0.794				
EE3		0.834				
EE4		0.729				
FC1			0.827			
FC2			0.797			
FC3			0.836			
PE1				0.737		
PE2				0.722		
PE3				0.717		
PE4				0.736		
SI1					0.82	
SI2					0.804	
SI3					0.754	
UB1						0.728

UB2						0.799
UB3						0.741

Source: Processed Data

Based on the table above, the results of the Loading Factor test were obtained after removing the FC4 indicator because the outer loading value did not meet the standard Loading Factor value. Apart from that, all indicators in the research have met the loading factor standard of 0,7 (Aurellia & Perdana, 2020). So that it can be continued to the next testing stage.

Average Variance Extracted (AVE)

This AVE value describe magnitude variant or diversity variable manifest that can received by the latent variable. The minimum value of this AVE is of 0.5 which shows that size *convergent validity* is Good (Cheung et al, 2024). Following This is results the testing.

Table 8. *Average Variance Extracted (AVE) Value*

Variable	Average Variance Extracted (AVE)
<i>Behavioral Intention</i>	0.602
Effort Expectancy	0.599
Facilitating Conditions	0.673
Performance Expectancy	0.53
Social Influence	0.629
<i>Use Behavior</i>	0.572

Source: Processed Data

Based on the table above, it can be seen that all variables have an AVE value above 0.5. It is said that there are no problems in the AVE test, or it is declared valid. (Aurellia & Perdana, 2020) explains that the AVE value is greater than 0.5, it can be said that the variables in the research are valid.

Validity test Discriminant

According to Lukaraja et al. (2020) validity discriminant showed with *cross loading* output value between indicator with variable the construct. Discriminant validity can be seen from the results of the cross loading value with the construct, each indicator in a construct has differences with indicators in other constructs which can be shown by a cross loading value that is greater than the construct itself. Following is results *output cross loading* that has been done calculation use SmartPLS variable latent must more big from correlation to other latent variables.

Table 9. *Output Cross Loading Values*

Indicator	Behavioral Intention	Effort Expectancy	Facilitating Conditions	Performance Expectancy	Social Influence	Use Behavior	Information
BI1	0.829	0.391	0.5	0.462	0.334	0.645	Valid
BI2	0.733	0.369	0.44	0.344	0.254	0.493	Valid
BI3	0.781	0.399	0.423	0.39	0.309	0.502	Valid
BI4	0.756	0.382	0.513	0.4	0.468	0.544	Valid
EE1	0.345	0.732	0.392	0.441	0.326	0.469	Valid
EE2	0.42	0.794	0.493	0.478	0.504	0.541	Valid
EE3	0.423	0.834	0.48	0.565	0.428	0.54	Valid
EE4	0.336	0.729	0.58	0.657	0.337	0.536	Valid
FC1	0.509	0.554	0.827	0.575	0.367	0.567	Valid
FC2	0.454	0.445	0.797	0.576	0.411	0.465	Valid
FC3	0.524	0.529	0.836	0.514	0.394	0.597	Valid

PE1	0.329	0.46	0.522	0.737	0.298	0.382	Valid
PE2	0.354	0.562	0.475	0.722	0.271	0.389	Valid
PE3	0.394	0.517	0.477	0.717	0.421	0.474	Valid
PE4	0.42	0.462	0.489	0.736	0.233	0.462	Valid
SI1	0.384	0.422	0.346	0.366	0.82	0.429	Valid
SI2	0.37	0.393	0.426	0.286	0.804	0.346	Valid
SI3	0.292	0.436	0.358	0.355	0.754	0.364	Valid
UB1	0.505	0.476	0.526	0.474	0.294	0.728	Valid
UB2	0.479	0.577	0.603	0.486	0.326	0.799	Valid
UB3	0.627	0.474	0.385	0.381	0.468	0.741	Valid

Source: Processed Data

Based on the results of the cross loading values between indicators and constructs in the table above, it can be seen that each indicator in a construct has differences with higher cross loading values in its own construct., so it can be seen from the numbers given sign color yellow, so can said that No There is problem in testing *discriminant validity*, or can said results from this *discriminant validity* Already good and valid.

Composite Reliability Test

The testing stage aims to show that the questionnaire used is consistent when used to measure the same problem in other places. This test was carried out using the Composite Reliability (CR) value with a threshold above 0.7 (Alfitriana, 2021). The following are the test results.

Table 10. *Composite Reliability*

Variable	Composite Reliability	Information
<i>Behavioral Intention</i>	0.858	Reliable
Effort Expectancy	0.856	Reliable
Facilitating Conditions	0.86	Reliable
Performance Expectancy	0.819	Reliable
Social Influence	0.836	Reliable
<i>Use Behavior</i>	0.8	Reliable

Source: Processed Data

Based on the table above, it can be seen that all variables have CR values above 0.7, so it can be said that there are no problems in the Composite Reliability test. In accordance with the aim of this test, it is used to ensure that the preparation of the questionnaire is good at measuring symptoms and producing valid data. This can be seen in the composite reliability results where all variables are above 0.7, so it can be stated that this questionnaire is reliable.

Analysis Inner Model

In stages This done analysis *Inner Model* . Structural model is test For know connection between variable construct, value significance and value *R-Square* from variable *Performance Expectancy*, variable *Effort Expectancy*, variable *Social Influence*, variable *Facilitating Condition*, variable *Behavioral Intention*, and variables *Use Behavior*.

Coefficient of Determination (*R-Square*)

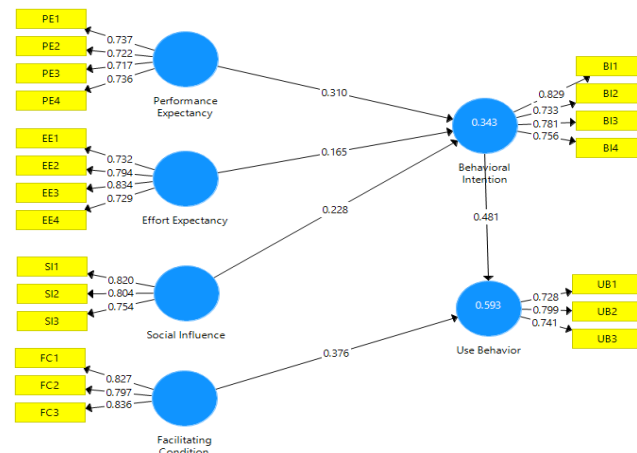
In stages This used For see how much big contribution influence exerted independent variable against variable dependent. At stage This done For explain variant from each target endogenous variable with standard measurement 0.67 which is significant strong, 0.33 means moderate, and 0.19 or below which is meaningful weak (Lukaraja et al., 2020).

Table 11. *Output Results of R-Square Values*

Variable	R Square	Information
<i>Behavioral Intention</i>	0.343	Moderate
<i>Use Behavior</i>	0.593	Moderate

Source: Processed Data

Based on table on can is known that ni R-square on the variable *Behavioral Intention* (BI) is 0.343 or The same with 34.3% and variable *Use Behavior* (UB) is 0.593 or The same with 59.3%. This matter means ability variable *independent* explain variable dependent *Behavioral Intention* (BI) is 34.3% (medium) which is significant the independent variable *Behavioral Intention* (BI) can be said own moderate influence in explain variable the dependent . And to ability the independent variable explains variable dependent *Use Behavior* (UB) is 59.3% which is significant the independent variable *Use Behavior* (UB) can be said own moderate (medium) deep influence explain variable the dependent.

Figure 3. *Inner Model*

Significance Test

Testing significance This can seen from mark *t-statistic* which is level significance between latent variable. This value obtained with carry out *the bootstrapping* process with *two-tailed* test on *software SmartPLS*. The level of significance used in study This namely 5% and level 95% confidence. So that mark *t-statistic* must more big of 1.96 and value *p-values* should be not enough from 0.05 for said significant. If value *t-statistic* < 1.96 and value *p-values* > 0.05 so hypothesis rejected and so on on the contrary.

Table 12. Results of Hypothesis Testing on the Connection between Variables

Hypothesis	Connection between variable	Original Sample (O)	T Statistics	P Values	Information
H1	PE -> BI	0.31	2,224	0.027	Accepted
H2	EE -> BI	0.165	1,198	0.232	Rejected
H3	SI -> BI	0.228	2,224	0.027	Accepted
H4	FC -> UB	0.376	4,013	0.00	Accepted
H5	BI -> UB	0.481	5,636	0.00	Accepted

Source: Processed Data

Based on table on can is known results from hypothesis that as much four hypothesis accepted and one hypothesis rejected. As for explanation from each hypothesis test is as following:

(H1) The Influence of Performance Expectancy (PE) on Behavioral Intention (BI)

Based on results analysis show that Performance Expectancy (PE) influential positive and significant to Behavioral Intention (BI). This matter shown in the results of the significance test with see mark t-statistic of $2.224 > 1.96$ and the p-values $0.027 < 0.05$. So it can be concluded that performance expectancy from the Mobile JKN application influence behavioral intention of application users.

(H2) The Influence of Effort Expectancy (EE) on Behavioral Intention (BI)

Based on results analysis show that Effort Expectancy (EE) No influential significant to Behavioral Intention (BI). This matter shown in the results of the significance test with see mark t-statistic of $1.198 < 1.96$ and the p-values $0.232 < 0.05$. So it can be concluded that effort expectancy from the Mobile JKN application influence behavioral intention of application users.

(H3) The Influence of Social Influence (SI) on Behavioral Intention (BI)

Based on results analysis show that Social Influence (SI) influential positive and significant to Behavioral Intention (BI). This matter shown in the results of the significance test with see mark The t-statistic of $2.224 > 1.96$ and the p-values of $0.027 < 0.05$. So it can be concluded that the influence of people on users to use Mobile JKN influences the behavioral intention of application users.

(H4) The Influence of Facilitating Condition (FC) on Use Behavior (UB)

Based on results analysis show that Facilitating Conditions (FC) influential positive and significant to Use Behavior (UB). This matter shown in the results of the significance test with see mark The t-statistic of $4.013 > 1.96$ and the p-values of $0.000 < 0.05$. So it can be concluded that the facilitating condition influences the use behavior of the Mobile JKN application.

(H5) The Influence of Behavioral Intention (BI) on Use Behavior (UB)

Based on results analysis show that Behavioral Conditions (BI) influential positive and significant to Use Behavior. This matter shown in the results of the significance test with see mark The t-statistic of $5.636 > 1.96$ and the p-values of $0.000 < 0.05$. So it can be concluded that the behavioral intention influences the use behavior of the Mobile JKN application

Conclusion

Based on results analysis research and discussion is known that variable *Performance Expectancy* (PE) has an effect to variable *Behavioral Intention* (BI), variable *Social Influence* (SI) is influential significant to variable *Behavioral Intention* (BI), variable *Facilitating Conditions* (FC) have an effect significant to variable *Use Behavior* (UB), and variables *Behavioral Intention* (BI) has an influence significant to *Use Behavior* (UB). Whereas For variable *Effort Expectancy* (EE) does not own influence to *Behavioral Intention* (BI). By whole variable *Performance Expectancy*, *Effort Expectancy*, and *Social Influence* the capable explain influence to *Behavioral Intention* amounting to 34.3%. And to variable *Facilitating Conditions* and *Behavioral Intention* capable explain influence on *Use Behavior* amounting to 59.3%. Suggestions for study furthermore expected can do review return to variable *Effort Expectancy*, against *Behavioral Intention* because variable the No influential significant. And also expected add variable traffic on models like motivation hedonist.

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