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Ease of Application and Security of Digital Banking Systems on Competitiveness and Performance: Phenomena in PT Bank DKI

Nina Carolina[1], Unggul Purwohedi[2], Saparuddin Mukhtar[3]

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Keywords

Application Ease;

Banking System;

Competitiveness;

Performance;

Security;

Abstract

The research objectives are to find out and analyze the effect of ease of application on bank satisfaction and to find out and analyze the effect of system security on bank satisfaction. This research is quantitative, namely a research method based on the philosophy of positivism, to examine a certain population or sample, collecting data through research instruments; data analysis is quantitative, intending to test the established hypothesis. Research results show that the ease of application positively affects application user satisfaction. It proves that the better the ease of application provided by Jaclinko, the greater the satisfaction with using the application, and it will affect the performance of PT Bank DKI, and system security will positively affect application user satisfaction. It proves that increasing system security in applications provided by Jaclinko can increase satisfaction in using applications and will affect the performance of PT Bank DKI.

1. Introduction

The banking problem that often occurs in Indonesia is the increasingly tight competition between banks, both Islamic and conventional banks and between Islamic banks. Therefore, DKI banks need unique products and services that are different from the products and services of competitors between financial institutions. This application also helps its users in making multiple payments such as top-up JakCard, Telkom PSTN biller, water bill, PLN electricity, ticket payment, subscription TV, regional retribution, e-Samsat, and payment of prepaid and postpaid credit bills via smartphone. The convenience provided only through smartphones can make it easier for customers to make payments in situations like the current Covid-19 pandemic, making it easier for us not to have to leave the house

[1] *State University of Jakarta, Indonesia. Email: ninacaroln@gmail.com*
[2] *State University of Jakarta, Indonesia.*
[3] *State University of Jakarta, Indonesia.*

when making payment transactions. Another advantage is that we don't need cash when shopping to minimize virus exposure from the money given. Besides providing convenience, Bank DKI also seeks to build deeper customer relationships.

With the JakOne Mobile Banking application, Bank DKI can increase customer satisfaction. One of the factors that can increase customer satisfaction with the application is the ease of application. Users of banking services have not fully utilized the convenience provided by the banking industry in mobile banking services. Various factors cause this; for example, many customers still do not know about the existence of mobile banking services (Milenia, R. I., & Rimadias, 2022). Previous research by Prastiawan et al. (2020) proves that perceived convenience positively affects the interest in using mobile banking, which means providing separate satisfaction to customers. Similar to research conducted, which proves that convenience.

Another factor that can affect customer satisfaction is system security. According to Hole et al. (2006), it is stated that security, namely the services provided, must be free of risk, danger and doubt and loss. Security also has considerable obstacles for consumers to use applications from financial services because often the obstacles encountered are quite risky in their use, for example, the existence of irresponsible hacker accounts that will drain the balance in their accounts, as well as consumers also often do not believe in the security of the data stored to activate their accounts. These results are supported by research of Chang and Chen (2009) that M-Banking security positively and significantly affects customer satisfaction.

2. Materials and Methods

This research is a kind of quantitative research, namely a research method based on the philosophy of positivism, to examine a particular population or sample, data collection through research instruments, and data analysis is quantitative, intending to test the established hypothesis (Watson, 2015). This study uses primary data obtained from distributing questionnaires. The sample criteria in this study are digital users. Data was obtained from distributing questionnaires, as many as 200 questionnaires.

This research is a type of field research. Field research, often called field research, aims to intensively study the current situation and environmental interaction of a social unit of society. Following the title and focus of the problem taken, the nature of this research is quantitative, which is a calculation based on statistical data in the form of numbers or numbers. In this study, researchers conducted field research about DKI Jakarta bank satisfaction.

3. Results and Discussions

Descriptive statistics

Descriptive statistics are used for data analysis or description for the sake of description collected without wanting to draw conclusions applied to generalizations. The descriptive statistics used are each variable's average (mean), sum, maximum, minimum, range, mode, and standard deviation values . Following are the results of descriptive statistical analysis on the variables used in this study.

Table 1.
Research Variable Demographics

	N	Minimum	Maximum	Means	std. Deviation
Ease_Application	90	1.00	5.00	22.9333	4.76127
Security_System	90	1.00	5.00	15.7333	4.23150
Satisfaction_Bank	90	1.00	5.00	22.7889	4.99099

Based on the descriptive results of the seven variables above, it is stated that (1) the ease of application variable has a minimum value of 1 and a maximum value of 5, which means that the respondents' answers start from neutral to agree. The mean value ranges from 22.93, indicating that the average respondent tends to answer in the direction of agreeing. The Standard Deviation value is 4.76. (2) the system security variable has a minimum value of 1 and a maximum value of 5, meaning the respondents' answers range from neutral to agree. The mean value ranges from 15.73, indicating that the average respondent tends to answer in the direction of agreeing. The Standard Deviation value is 4.231. (3) the application user satisfaction variable has a minimum value of 1 and a maximum value of 5, meaning the respondents' answers range from neutral to agree. The mean value ranges from 22.788, indicating that the average respondent tends to answer in the direction of agreeing. The Standard Deviation value is 4.990.

Data Quality Test

1. Validity Test

Validity is carried out to indicate the extent to which the measurement tool used is about the measurement target or what is to be measured. This correlation analysis is measured using the mathematical product-moment method.

Table 2.
Validity Test Results

Variable	Items	r count	r table	Information
Ease of application (X1)	X1.1	0.769**	0.207	*Valid*
	X1.2	0.838**	0.207	*Valid*
	X1.3	0.793**	0.207	*Valid*
	X1.4	0.764**	0.207	*Valid*
	X1.5	0.746**	0.207	*Valid*
	X1.6	0.847**	0.207	*Valid*
	X1.7	0.811**	0.207	*Valid*
	X1.8	0.768**	0.207	*Valid*

System Security (X2)	X2.1	0.891**	0.207	*Valid*
	X2.2	0.964**	0.207	*Valid*
	X2.3	0.889**	0.207	*Valid*
	X2.4	0.840**	0.207	*Valid*
	X2.5	0.808**	0.207	*Valid*

Source: SPSS, 2023

The results of table above show that the calculated r value for each statement of all variables is greater than the r table, which is 0.207. Then it can be stated that all statements in the research questionnaire are valid so that all questionnaire items can be used as a testing model.

Table 3.
Validity Test Results

Variable	Items	r count	r table	Information
Application user satisfaction	Y1	0.868**	0.207	*Valid*
	Y2	0.885**	0.207	*Valid*
	Y3	0.586**	0.207	*Valid*
	Y4	0.812**	0.207	*Valid*
	Y5	0.767**	0.207	*Valid*
	Y6	0.403**	0.207	*Valid*

Source: SPSS, 2023

Based on the results from Table 3 above show that the calculated r value for each statement of all variables is greater than the r table, which is 0.207. Then it can be stated that all statements in the research questionnaire are valid so that all questionnaire items can be used as a testing model.

2. Reliability Test

Reliability is the level of accuracy *output* measure. A measure that has fairly high reliability, namely a measure that can describe a reliable measuring output. Reliability is one of the main identities or objects of a capable measurement tool (Bloomfield, J., & Fisher, 2019). Reliability test measurements use Cronbach's Alpha of more than 0.60.

Table 4.
Application Ease of Reliability Test Results

No	Variable	*Cronbach's Alpha*	*Decision rate*	Information
1.	Ease of application	0.913	0.60	*Reliable*
2.	System Security	0.922	0.60	*Reliable*
3.	Application user satisfaction	0.821	0.60	*Reliable*

Source: SPSS, 2023

Based on table above, it is known that the reliability test results showed that all the variables of ease of application, system security, and application user satisfaction are *reliable* or can be trusted to use variable measuring instruments because Cronbach alpha> 0.60.

Data Exposure

1. Normality Test

The researcher uses SPSS as a tool to carry out the normality test. In this case, the researchers used testing using Kolmogorov-Smirnov. In interpreting the normality test results data, we look at the columns for ease of application and system security; in Table 4.2, there is a probability value of 0.200 (Sig (2-tailed)). Data requirements are normally distributed if probability or on the normality test with Kalmogorov-Smirnov. Because the value is 0.200 or, it is accepted by being rejected. This means that data on ease of application and system security comes from a normally distributed population.$p > 0{,}05 p > 0{,}05 H_0 H_1$. Based on the tests performed above, it can be concluded that the data show a normal distribution. Thus fulfilling the analytical test requirements.

2. Multicollinearity Test

To detect whether our regression model has collinearity, VIF is applied. VIF stands for Variance Inflation Factor.

Hypothesis:

H_0: There is collinearity between the independent variables

H_1: There is no collinearity between the independent variables

Collinearity testing criteria:

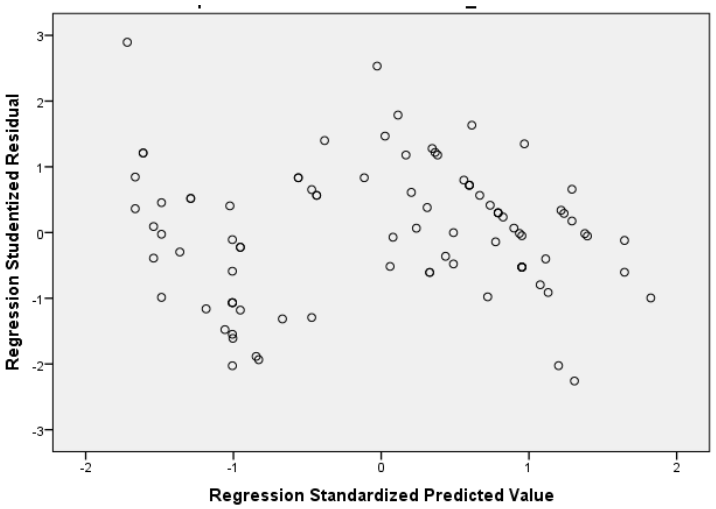
a) It has a VIF value of around 1
b) It has a tolerance number close to 1

The tolerance value of 0.638 is still below number 1, and the VIF number is 1.568, which exceeds number 1. So there is a free guess from multicollinearity between the variables of ease of application and system security.

3. Heteroscedasticity Test

Heteroscedasticity is when the observed error or residual has no constant variance. Heteroscedasticity conditions often occur in cross-sectional data or from several respondents at a certain time. One method for detecting the presence of heteroscedasticity is to make a scatter-plot between Standardized Seconds (ZRESID) and between standardized Predicted Volumes (Y hats). The figure below shows no change in e along the Y cap, so there is no heteroscedasticity in the error (error/residual).

Figure 1. Heteroscedasticity Test Scatter-plot



Based on figure 1. above, it is known that the graph points do not have a clear pattern, and the points spread up and down the number 0 on the y-axis, so the test results identify no heteroscedasticity symptoms.

Research Hypothesis Testing

To describe and test the relationship between research variables, research, in this case, uses multiple regression tests. Based on the results of calculations using the SPSS program, the results can be seen in the table below:

Table 5
Hypothesis Testing Results

The coefficient of determination	R2		Adj R2	Conclusion
	0.824		0.820	Good
F test	F		Sig	
	203,326		0.000b	Fit models
T-test	Direction	Coef.	Sig	
Constant		0.490	0.665	
Ease Application	(+)	0.806	0.000	H1 Accepted
Security System	(+)	0.243	0.000	H4 Accepted

Y=Application user satisfaction

The coefficient of determination

The coefficient of determination has a function to explain the extent to which the ability of the independent variables (ease of application, system security) to the dependent variable (application user satisfaction). It shows that in the R Square column, it is known that the total percentage of variation in the dependent variable explained by the independent variable is 0.82 or 82%. This means

that the influence of the independent variables (ease of application, system security) on the dependent variable (satisfaction of application users) is 82%, while other variables outside this study explain the rest (100 – 82%=18%).

F test

F test, to test whether the independent variable simultaneously influences the dependent variable, with a confidence level of 95% (α = 0.05). From the results of the F test, an F value of203,326with a significance value of 0.000. Because the F value is positive and the significance value is less than 0.05, it states that ease of application and system security jointly positively affect application user satisfaction, which can be accepted.

t-test (Hypothesis Test)

The statistical t-test is intended to test the partial effect of the independent variable on the dependent variable with the assumption that other variables are considered constant, with a confidence level of 95% (α=0.05). From multiple linear regression, it is explained as follows.

a. Based on the hypothesis test results, the ease of application proved to have a positive effect on application user satisfaction. This is evidenced by a positive trending coefficient of 0.806 and a significant (0.000 > 0.05). This means it is rejected and H1 is accepted; it is concludedH_0there is a positive influence between the ease of application (X1) and application user satisfaction(Y).

b. Based on the results of the system security hypothesis test, it is proven to have a positive effect on application user satisfaction. This is evidenced by a positive trending coefficient of 0.243 and significance (0.000 <0.05). This means it is rejected, and H2 is accepted; it is concludedH_0there is a significant positive effect between system security (X2) on application user satisfaction(Y).

Discussion

Effect of ease of application on application user satisfaction

The results obtained from the statistical data processing that has been done show that the variables ease of application shows the value of Sig 0.000 <0.05, so it can be seen that the variables of application have a positive effect on application user satisfaction. Thus, the hypothesis formulated in accordance with the results of the research done on hypothesis 1 is accepted. This proves that the better the ease of application, the greater the satisfaction of application users.

The study's result proves that the ease of application has a positive effect on application user satisfaction. These results are consistent with the research conducted by Hermawan & Paramita (2020), who proved that the perception of convenience positively affects the interest in using mobile banking, which means it provides separate satisfaction for customers. It proves that convenience affects application user satisfaction.

Effect of system security on application user satisfaction

The results obtained from the statistical data processing that has been done show that the variables system security shows the value of Sig 0.000 <0.05, so it can be seen that the variable system security has a positive effect on application user satisfaction. Thus, the hypothesis formulated in accordance with the results of the research done on hypothesis 4 is accepted. This proves that the

better the system's security, the greater the application users' satisfaction. Based on the research results, it proves that system security has a positive effect on application user satisfaction. These results are consistent with the research conducted by Chang and Chen (2009) that M-Banking security has a positive and significant effect on customer satisfaction.

4. Conclusions

This study aims to determine the effect of the ease of application and security of the digital banking system on the competitiveness and performance of PT Bank DKI. This study used SPSS statistical software and primary data, namely distributing questionnaires online. The results of this study is concluded as follows. First, ease of application has a positive effect on application user satisfaction. This proves that the better the ease of application provided by Jaclinko, the greater the satisfaction with using the application will affect the performance of PT Bank DKI. Second, system security has a positive effect on application user satisfaction. This proves that increasing system security in applications provided by Jaclinko can increase satisfaction in using applications and will affect the performance of PT Bank DKI.

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