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The Effect of Internet Banking Use and Customer Protection Against Cyber Crime at Bank Rakyat Indonesia

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ABSTRACT

With the very rapid development of technology that helps humans in carrying out their activities, one of them in the banking world has emerged a product in the banking world, namely internet banking. The problem with technological developments is the higher the number of crimes that occur in the internet banking process. This study uses a quantitative research method with a case study of one of Indonesia's national banks, namely Bank BRI specific in BRI KC Majalaya. This study found that the use of internet banking has a significant effect on cybercrime at Bank BRI KC Majalaya and consumer protection has a significant effect on cybercrime.

1. Introduction

With the very rapid development of technology, it helps humans in carry out activities (Pea, 2018), one of which is in the world of banking, a product has emerged in the banking world, namely internet banking (Rahmayati, 2021). Internet banking is bank services and products directly to customers via electronics, the role of internet banking greatly facilitates customers in carrying out banking transaction activities (Sasono et al., 2021). Behind this convenience, internet banking is very vulnerable to cybercrime. Bank BRI KC Majalaya offers internet banking services to facilitate customers financial transactions. BRI internet banking services can be accessed by customers via mobile devices or laptops connected to the internet, this method is used for cashless financial transactions. The researcher chose the location for research at BRI KC Majalaya bank. The customer data obtained by researchers from BRI KC Majalaya bank are as follows:

Table 1. Internet Banking User Customers at Bank BRI Majalaya Branch Office

No.	Year	Customers	Percentage
1.	2015	597	-
2.	2016	768	28,6%
3.	2017	617	-19,6%
4.	2018	891	44,4%
5.	2019	1062	19,1%

Resource: Bank BRI KC Majalaya (2020)

From Table 1, it can be concluded that every year the number of internet banking users at Bank BRI KC Majalaya fluctuates, in 2015 - 2016 it increased by 28.6% but decreased in 2017 by -19.6%, then it rose again. in 2018 by 44.4% and 2019 by 19.1%. Based on the background of the problem above, the formulation of the problem is as follows: (1) How is the effect of using internet banking on cybercrime for BRI KC Majalaya bank customers? (2) What is the effect of customer protection against cybercrime on BRI KC Majalaya bank

customers? (3) How does the simultaneous use of internet banking and customer protection against cybercrime affect the customers of BRI KC Majalaya bank?. Research can cover the shortcomings of previous research regarding internet banking (Ilchenko et al., 2019; Ogunwale, 2020; Wang et al., 2020).

The object of this research is internet banking user customers at BRI KC Majalaya bank. The object of research becomes a target in research to find an answer or solution to each problem. In this study, researchers used quantitative research methods with an associative approach (Strauss and Corbin, 1990). defines that "Associative research is research that aims to determine the influence or also the relationship between two or more variables".

This type of research uses quantitative research methods with an associative approach. This study aims to determine the effect of internet banking use and customer protection against cybercrime at BRI KC Majalaya bank. The type of data used is primary data. Primary data in this study were obtained from questionnaires that were distributed to respondents.

Data collection techniques can be used in several ways: (1) Observation, namely the data collection method through direct observation in the field by observing internet banking users at Bank BRI KC Majalaya. (2) Interview is an effort to collect data through structured questions to the bank at Bank BRI KC Majalaya which is carried out directly (face to face).

The population in this study were all internet banking users at BRI KC Majalaya bank, namely 1062 customers. The number of samples taken based on the Slovin formula (Tejada & Punzalan, 2012). Thus the number of samples to be taken is 91 customers. This study was

tested using several data testing tools, namely: (1) Validity Test, (2) Reliability Test, (3) Multiple Regression Analysis, and (4) Coefficient of Determination Analysis (Creswell & Creswell, 2017).

2. Literature Review

According to Gitman et al (2015) defines that "a bank is a container for every company engaged in finance where the activities carried out can only collect funds or only distribute or maybe both". A bank is a business entity whose assets are in the form of financial assets and non-financial assets (Lysandrou & Nesvetailova, 2015). Next is the definition of usage. usage means the process, the way of using something, or the use of using or using something such as facilities or goods (Fiske, 2017). Internet Banking is banking services and products directly to customers via electronics (Raza et al., 2020). Based on the two definitions above, it can be concluded that the use of internet banking is a customer activity that uses transactions, payments, and other transactions using the internet with the bank's website. Law no. 8 of 1999 concerning customer protection explained that all efforts that guarantee legal certainty are to provide customer protection. Based on the definition above, it can be concluded that customer protection is a legal umbrella for bank protection for its customers (Howells & Weatherill, 2017). Cybercrime is a form of crime directed against computers and computer networks (Furnell & Dowling, 2019). Meanwhile, according to Manap (2015), cybercrime is a crime in the realm of cyberspace that utilizes technology." Based on the above definition, it can be concluded that cybercrime is a crime that uses computer technology and internet networks as targets.

3. Result and Discussion

a. Effect of Internet Banking Use on Cyber Crime at Bank BRI KC Majalaya

Validity Test

The validity test of the statement item is said to be valid if r count > r table, otherwise, the statement item is said to be invalid or invalid if r count < r table. The overall results of the validity test of the use of internet banking against cybercrime can be seen below:

Table 2. Test the Validity of Using Internet Banking

Items	r Count	r Table	Note
X_1.1	0,328	0,173	Valid
X_1.2	0,386	0,173	Valid
X_1.3	0,188	0,173	Valid
X_1.4	0,363	0,173	Valid
X_1.5	0,421	0,173	Valid
X_1.6	0,436	0,173	Valid
X_1.7	0,400	0,173	Valid
X_1.8	0,375	0,173	Valid
X_1.9	0,374	0,173	Valid
X_1.10	0,240	0,173	Valid

Resource: Result Research 2020

Based on table 2 it can be concluded that in the validity test it is known that 10 statements in the internet banking usage variable questionnaire are valid because r count > r table.

Reliability Test

This reliability test was carried out to determine the Cronbach's alpha value of a variable using IBM SPSS Statistics 23 to see the reliability value of internet banking use, which can be seen from the table below:

Table 3. Test the Reliability of using Internet Banking

Reliability Statistics

Cronbach's Alpha	N of Items
.199	10

Source: 2020 research results

Based on table 3, the reliability test data obtained on Cronbach's alpha shows 0.199 which means it has low reliability.

The reliability of Cyber Crime in this study is found in table 4.10 as follows :

Table 4. Cybercrime Reliability Test

Reliability Statistics

Cronbach's Alpha	N of Items
.236	10

Source : 2020 research results

Based on the table 4, the reliability test data obtained on Cronbach's alpha shows 0.236, which means it has low reliability.

Data Normality Test

The normality test aims to test whether in a regression model, the confounding or residual variables have a normal distribution or not. A good regression model is having normal or close-to-normal data distribution.

Table 5. Data Normality Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		91
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	2.70395118
Most Extreme Differences	Absolute	.048
	Positive	.048
	Negative	-.038
Test Statistic		.048
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Source : 2020 reseach results

Based on the table 5 above, the results of the normality test using the One-Sample Kolmogorov-Smirnov test show that the p-value of the Asymp Sig value of 0.200 is greater than 0.05 (p > 0.05), so it can be concluded that the data tested is normally distributed.

Analysis of the Coefficient of Determination

Analysis of the coefficient of determination is used to find out how much influence the internet banking usage variables have on cybercrime by calculating the IBM SPSS Statistics 23 as follows :

Table 6. Analysis of the Coefficient of Determination

Model Summary[b]

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.228[a]	.052	.041	2.71910

a. Predictors: (Constant), Pengunaan_internet_banking (X_1)

b. Dependent Variable: Cyber_crime

Source : 2020 research results

Based on the table 6 above, it can be seen that the coefficient of determination (R2) is 0.052 or 5.2%. This shows that the internet banking usage variable is influenced by the cybercrime variable by 5.2% and the remaining 94.8% is influenced by other factors not examined.

T test

The t-test shows how far the influence of each variable on the use of internet banking individually on the cybercrime variable.

Table 7. T Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	26.194	2.149		12.187	.008
	Pengunaan_internet_banking	.146	.066	.228	2.209	.000

a. Dependent Variable: Cybercrime

Source : 2020 reseach results

Based on table 7 shows that the value of t count is 2,209 while the t table is 1.662 or t count > t table and a significance level of 0.000 <0.1 thus it can be concluded that H0 is rejected and accepts H1 meaning that the use of the internet banking has a significant effect on cybercrime at Bank BRI KC Majalaya.

b. The Effect of Customer Protection on Cyber Crime at Bank BRI KC Majalaya

Validity Test

The validity test of the statement item is said to be valid if r-count > r-table otherwise the statement item is said to be invalid or invalid if r-count < r-table. The overall results of the validity test of Customer Protection against Cybercrime can be seen below:

Table 8. Test the Validity of Customer Protection

No. items	r count	r table	Description
$X_2.1$	0,257	0,173	Valid
$X_2.2$	0,328	0,173	Valid
$X_2.3$	0,295	0,173	Valid
$X_2.4$	0,375	0,173	Valid
$X_2.5$	0,453	0,173	Valid
$X_2.6$	0,382	0,173	Valid
$X_2.7$	0,508	0,173	Valid
$X_2.8$	0,424	0,173	Valid
$X_2.9$	0,221	0,173	Valid
$X_2.10$	0,330	0,173	Valid

Sourch: 2020 reseach results

Based on the table 8 it can be concluded that in the validity test it is known that 10 statements in the customer protection variable questionnaire are valid, because r count > r table.

Reliability Test

This reliability test was carried out to determine the Cronbach's alpha value of a variable using IBM SPSS Statistics 23 to see the reliability value for customer protection, which can be seen from the table below:

Table 9. Customer Protection Reliability Test (X_2)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.239	.243	10

Source : 2020 reseach results

Based on the table 9 above, the reliability test data obtained on Cronbach's alpha shows 0.239 which means it has low reliability, this is by following table 3.3 the level of reliability contained on page 29.

T test

The t-test shows how far the influence of each Customer Protection variable on cyber crime variables.

Table 10. Customer Protection t test

Coefficients[a]

Models		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	37.595	3.867		9.723	.006
	Customer Protection	-.174	.100	.181	1.736	.000

a. Dependent Variable: Cybercrime

Source : 2020 reseach results

Based on the table 10 above, it shows that the value of t count is 1,736 while the t table is 1.662 or t count > t table and a significance level of 0.000 <0.1, thus it can be concluded that H0 is rejected and accepts H1 meaning that customer protection has a significant effect on cybercrime at Bank BRI KC Majalaya.

b. Effects of Using Internet Banking and Customer Protection against Cyber Crime at Bank BRI KC Majalaya

Multiple Correlation Analysis

The multiple correlation test aims to determine the degree of closeness (simultaneously) between two or more independent variables (Use of Internet Banking and Customer Protection) on the dependent variable (Cybercrime) using IBM SPSS Statistics SPSS version 23.

Table 11. Multiple Correlation Analysis

Model Summary

					Change Statistics				
Models	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.289[a]	.083	.062	2.68903	.083	3.996	2	88	.000

a. Dependent Variable: Cybercrime

b. Predictors: (Constant), Customer_Protection, Use of_Internet_Banking

Source: 2020 research results

Based on the table 11 above, the summary model can be seen at 0.289, meaning that there is a relationship between Internet Banking Use, Customer Protection, and Customer Protection against Cyber Crime at Bank BRI KC Majalaya.

Multiple Regression Analysis

Multiple regression analysis is used to determine the influence of Internet Banking Use and Customer Protection partially or jointly on Cybercrime. The results of multiple regression analysis performed using the IBM SPSS version 23 program are as follows:

Table 12. Multiple Regression Analysis

Coefficients[a]

Models		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.836	3.790		8.399	.000
	Use of Internet Banking	.147	.065	.231	2.265	.026
	Customer Protection	.149	.085	.180	1.761	.082

a. Dependent Variable: Cybercrime

Source: 2020 research results

Based on the table 12 above, a multiple regression equation model can be created which is written as follows:

$Y = a + b_1X_1 + b_2X_2$

Y = 3,836 + 0,147 + 0,149

The interpretation of the multiple linear regression equation is::

1. a = 3,836 states that, if the variables of Internet Banking Use and Customer Protection are considered constant, then the magnitude of Cyber Crime occurring at Bank BRI KC Majalaya is 3,836.
2. X_1 0,147 states that, every use of Internet Banking will cause Cyber Crime at Bank BRI KC Majalaya in the amount of 0,147.
3. X_2 = 0,149 states that, the customer protection provided by the bank against Cyber Crime at Bank BRI KC Majalaya is equal to 0,149

4. Conclusion

Based on the results of research and discussion regarding the use of internet banking and customer protection against cybercrime at Bank BRI KC Majalaya. Can be concluded that: The use of internet banking (X1) has a significant effect on cybercrime (Y) at Bank BRI KC Majalaya. This can be seen from the t count > t table of 2.209 > 1.662 and a significance of 0.000 <0.1, then H0 is rejected and accepts H1 or the use of internet banking (X1) has a significant effect on cybercrime (Y). As for the R test, the R square value obtained is 0.052 or 5.2%. Thus the use of internet banking (X1) against cybercrime (Y) is 5.2%.

Customer protection (X2) has a significant effect on cybercrime (Y) at Bank BRI KC Majalaya. This can be seen from the t count > t table of 1.736 > 1.662 and a significance of 0.000 <0.1, then H0 is rejected and accepts H1 or customer protection (X2) has a significant effect on cybercrime (Y). As for the R test, the R square value obtained is 0.033 or 3.3%. Thus customer protection (X2) against cybercrime (Y) is 3.3%. Simultaneous use of internet banking (X1) and customer protection (X2) against cybercrime (Y) at Bank BRI KC Majalaya. It can be seen in the F test that F count > Ftable (4.881 > 1.94) with a significance level of 0.000 < 0.01. This shows that the use of internet banking (X1) and customer protection (X2) simultaneously has a significant effect on cybercrime (Y) or H0 is rejected and H1 is accepted. What is calculated by the correlation coefficient is 0.289, this shows the existence of a relationship between all variables. And the coefficient of determination is 0.083 or 8.3%, meaning that the use of internet banking (X1) and customer protection (X2) is 8.3% against cybercrime (Y), while the remaining 91.7% is influenced by other factors that are not researched.

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