

# Effect of Security and Risk Perception in Using Internet Banking Using Linear Regression Method

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**Abstract**— Along with the development of Internet technology in Indonesia, banking services are conducted through the Internet was growing. Internet banking is one of the technologies in conducting banking transactions offered to customers. This study aimed to determine the effect of the safety factor and the risk in using internet banking. The method used in this research is by using a linear regression model of TAM (Technology Acceptance Model). Data was collected by using a questionnaire. This study shows that simultaneous security and risk variables significantly influence customers' interest in using internet banking.

**Keywords**— Internet banking, security, risk, linear regression, tam.

## I. INTRODUCTION

Development of Internet technology is now adopted in the banking sector. This is reflected by the number of banking companies that implement Internet Banking services. Internet banking is an innovation that allows people to conduct transactions anywhere and anytime. Internet Banking answering the demands of customers who want service fast, secure, convenient, and accessible from anywhere. The use of Internet Banking more effective and efficient for our customers.

Based on the results of the study Genius Financial Study, the number of customers grew from 23 percent in 2014 to 36 percent in 2018. Of the growth in customer numbers, Internet users and mobile banking also grew from 28 percent in 2014 to 30 percent in 2018.

Based on the background described, the writer interested to do research with title "Influence Factors And Security Risks In Using Internet Banking Using Linear Regression Method,".

## II. PLATFORM THEORY

### 2.1 Internet Banking

According to Bank Indonesia, Internet banking is one of the Bank's services that allow the customer to obtain information, communicate and conduct banking transactions through the Internet. According to Thulani et al., In Safeena et al., (2010: 3) Internet banking refers to a system that allows bank customers to gain access to their accounts and general information about bank products and services through the use of a bank site, without the intervention or the inconvenience of sending mail, fax, the original signature and telephone confirmation.

### 2.2 Risk Perception

According to Dowling (2001), perceptions of risk (perceived risk) is a negative perception of consumers on a

number of akitivitas based on negative results and allow that the results are real. The amount of consumer perceptions about the risks affecting the amount of interest in customers' internet banking and internet banking systems of these. Consumers often assume that there is a high risk although this risk is actually low. Consumers who are more experienced internet banking have more information about Internet banking so that they assume a low risk karena that they have more interest in internet banking transactions. From this description it can be concluded that the perception of risk can be used to gauge customer interest.

### 2.3 Security

Security of information is how we can prevent fraud (cheating) or at least, detecting fraud in an information-based system, where information itself has no physical meaning. Sathye research results in Almuntaha (2008) states that security is the most important issue and often with publication on security at the media make customer confidence in the security of Internet Banking reduced.

According Casalo et al., In Zahid et al., (2010) from a consumer standpoint, is the ability to protect the security of information or data consumers from fraud and theft in online banking business.

### 2.4 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is a model of acceptance of information systems that will be used by the user (manual) (Jogiyanto, 2007). According to Davis, Bagozzi and Warshaw in Almuntaha (2008) TAM considers that the adoption of the technology by the user is determined by two perceptions, the perception of the benefits (of Perceived Usefulness) and perceived ease (Perceived of Ease).

### 2.5. Linear Regression Analysis

Multiple linear regression analysis is a linear relationship between two or more independent variables ( $X_1, X_2, \dots, X_n$ ) with the dependent variable ( $Y$ ). This analysis is to determine the direction of the relationship between the dependent and independent variables are each independent variable associated positive or negative, and to predict the value of the dependent variable when the independent variable value increased or decreased. The data used is usually an interval or ratio scale. Multiple linear regression equation as follows:

$$Y' = a + b_1x_1 + b_2X_2 + \dots + b_nX_n$$

Information:

$Y'$  = dependent variable (the predicted value)

$X_1$  and  $X_2$  = independent variable

a = constant (Y value 'when X1, X2 ... ..Xn = 0)  
 b = The regression coefficient (value increase or decrease)

III. PREVIOUS RESEARCH

Research on Internet Banking has been much researched, some previous researchers, namely:

1. Research from Sri Maharsi and Yuliani Mulyadi in 2007 with the title: "Factors Affecting Customer Interests Using Internet Banking Framework Using Technology Acceptance Model (TAM)". Where this research takes two main variables of the framework of the Technology Acceptance Model (TAM) that is Perceived Usefulness and Perceived Ease of Use as an intervening variable to add a variable Perceived Credibility. Factors ease of using Internet Banking (PEU) indirectly also affect the interest in using Internet Banking (BI) through the benefits of Internet Banking (PU) and the credibility of Internet Banking (PC). Factors ability to use a computer (CSE) also affects the interest in using Internet Banking (BI), only influence indirectly through the benefits of Internet Banking (PU), the ease of using the Internet Banking (PEU) and credibility of Internet Banking (PC).
2. Isaiah Lule, Tonny Omwansa brokerage, and Timothy Mwolo Waema examine the application of TAM on M-Banking in Kenya. There is some construction was found to significantly affect the adoption of M-banking. The analysis showed that the perception Ease of Use, Perceived Usefulness, Perceived Confidence and Credibility perceptions significantly affected the customer's attitude towards the use of M-banking. The results of the data analysis contributes to knowledge by showing that the above factors are very important in attitudes towards the use of M-banking in the context of developing countries. The implications of the results form a good basis for practical recommendations for the banking industry, and directions for further work.
3. Ahmad and Bambang Setiyo testifying in his research examines the Influence of Perceived benefits, Perceived Ease, Security, and Availability Features of Interest Bank Customers In Using Internet Banking (Study on Internet Banking Service Program BRI). The method used is quantitative method using a sample population of BRI customers. Based on the results of the study indicate that there is a hypothesis that can not be accepted that partially shows the perception of the benefits, security, and availability features have positive influence and significant interest in re-using the Internet Banking service, except on variables perceived ease that does not have a significant impact on interest the customer in using Internet Banking.

3.1. Mindset Troubleshooting

The following design problem-solving mindset for this study:

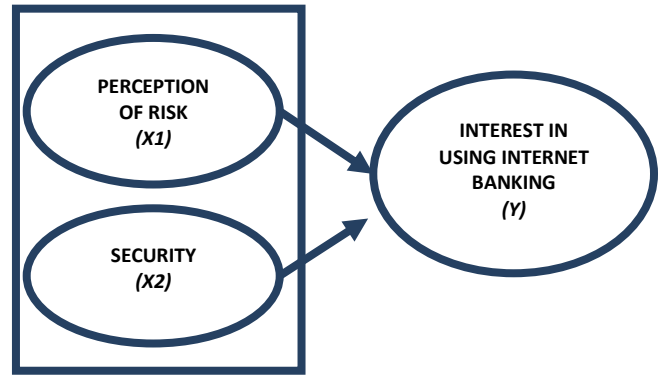


Figure 1. Mindset Troubleshooting

IV. DISCUSSION OF RESEARCH

4.1. Linear regression

Linear regression analysis is used to find out how strong the influence between Risk and Security in Using Internet Banking.

TABLE 1. Linier Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.495 <sup>a</sup>	.245	.186	1.439

Based on the table above, it is known that the amount of Adjusted R Square or the coefficient of determination is 0.245 or 24.5%, it can be interpreted that at 24.5%, the Interest in Using Internet Banking can be explained using the Risk and Security variable. While the remaining 75.5% is explained by other causal factors not included in this study or in other words the magnitude of the effect of Risk and Safety simultaneously at 24.5% while the remaining 75.5% is influenced by other factors.

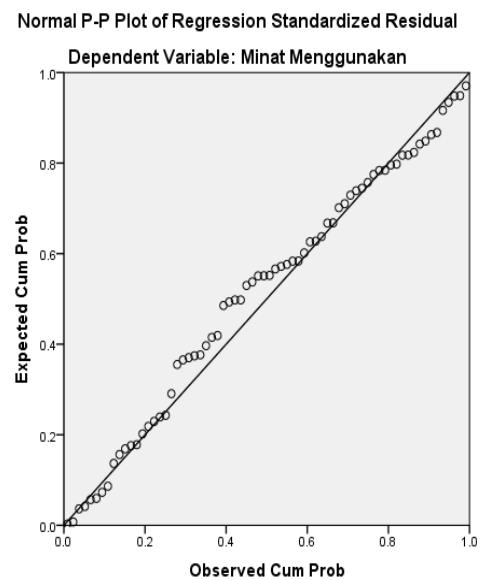


Figure 2. P-Plot Linear regression

Normality test is useful to determine whether the dependent variable, independent or both normal distribution, near normal or not. A good regression model should be normal or nearly normal distribution. To detect whether the data were normally distributed or not, it is known to describe the distribution of data through a graph.

To test whether the data distribution normal or near normal can be done with the graph (Ghozali, 2001), the way is to look at the normal graph plots.

#### V. CONCLUSION

This research is structured in order to Determine Whether the perception of Security and Risk are some of the factors that Affect interest Using Internet Banking. After doing this research, then the conclusion such as:

1. There is no significant effect of variable Security (X1) against the Interests Using Internet Banking amounting 0.1%. And based on the t test, then Ho is accepted and Ha rejected,
2. There is a significant effect of the variable Risk (X2) against the Interests Using Internet Banking amounting 7,6%, based on the t test, then Ho is rejected and Ha accepted.
3. Simultaneously, the variable Security (X1) And Risk (X2) Significantly Affect the interest Using Internet Banking 24.5%. And based on the F test, then Ho rejected and Ha accepted.

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