

# Benefits by Using Internet Banking in Transactions among Cybercrime Threats

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## Abstract

This research was conducted to gain confidence in a number of factors such as convenience, trust and security that affect people's interest in transacting using internet banking amid the increasing threat of cybercrime attacks on the theft of account owner assets. The data collection method used a questionnaire with research samples taken from government and private banks using convenience sampling technique and the results obtained were 120 respondents. The results of the study concluded that the convenience and security factors had a positive and significant effect on asking people to use internet banking, while trust had no significant effect.

**Keywords:** Convenience, trust, security, cybercrime, internet banking.

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## INTRODUCTION

The development of the goods and services industry today is growing very fast because it is supported by the growth of information technology that changes from traditional to modern work methods that are better (Halbouni et al., 2016) in helping human work. Along with the convenience offered, the use of technology often has a considerable effect on the security of its use, because criminals only need a few minutes to hack into your banking account to make banking transactions via a computer or cell phone as happened with the use of mobile banking (Ramadhansari, 2021). For this reason, good and secure information system governance is needed from criminals who can detect and prevent fraud in the community (Bierstaker, 2009; Krambia-Kapardis, 2019; Sharma & Panigrahi, 2012). Crimes that occur in internet banking/mobile banking have harmed many users and continue to increase every year which is carried out with various modes of crime that alternate such as: Pharming, Spoofing, Keylogger, Phishing, Sniffing (Otoritas Jasa Keuangan, 2021). Furthermore, the biggest problem faced by internet banking is the security problem that is always threatening by cyber

criminals who are increasing in the financial services sector (Digital Marketing Jakarta, 2017), not only harms the user but also the internet banking service provider. Another big problem faced by internet banking can be due to several factors, such as DDoS attacks combined with malware or ransomware attacks, errors in code or configuration errors. Because any disturbance that occurs can cause downtime. The risk borne as a result of this downtime is quite large, and will be very burdensome for the company, because in addition to the fairly high costs, it creates a sense of trust in customers and investors that is reduced. Furthermore, the occurrence of downtime also results in lowering employee performance and morale which in the end causes business losses that are calculated not only on a scale of millions but billions of rupiah (Digital Marketing Jakarta, 2017).

Indonesia is one of the countries which are most people using smartphone, with cheap internet rates, has pushed the number of smartphone users in Indonesia to reach 167 million people or 89% of the total population of Indonesia (Hanum, 2021). The high number of smartphone ownership should make it easier and

support the implementation of internet banking and make the program more effective and efficient. The ease of use of systems such as personal transactions (shopping, transfers, etc.) and business (taxes, debt payments or transfers, etc.) offered triggers people's interest in using modern technology with all perceptions of benefits, usability, security and so on (Davis, 1989; Venkatesh *et al.*, 2012) as stated in TAM and UTAUT-2 especially with the use of internet-based technology. In addition, the level of public literacy that is getting better also affects their desire to use virtual technology facilities in the form of internet banking (Nasution *et al.*, 2020), then the indicator of the speed of the transaction process is able to bring benefits to their business partners. using (Westerman *et al.*, 2014), but still within the framework of good business ethics (Prihanto, 2018) that is mutually beneficial. It is necessary to start adapting, however, even though technology is accompanied by the convenience it offers, it cannot simply be accepted, there needs to be trust that supports the action of using the media in business (Akrouf, 2019) which can arise due to forms of trust such as: calculative, cognitive, institutional, and affective (Akrouf, 2019). For this reason, adapting the use of internet banking in the era of cybercrime is very research to be done in order to obtain evidence and analyze the interests that make people interested in using internet banking based on the point of view of ease of transaction, public trust and security provided by internet banking service providers. This study differs from previous research, namely in that the focus of this research was on the perception of internet banking users based on their considerations of choosing the application when cybercrime attacks on the internet were getting more intense, and with this situation the researchers investigated the causal factors behind the community to decide to choose. internet banking offered by banks in conducting personal and business transactions such as: shopping, paying taxes, paying off project funding, etc.

## LITERATURE REVIEW

### Planned Behavior Theory

Acceptance and utilization of technology used by the public is closely related to the behavior shown specifically by someone who is then identified through behavioral intentions to perform the behavior, and the behavioral intention is predicted by two factors, namely through attitudes in carrying out the behavior, and subjective norms associated with the behavior (Ajzen, 1991). Likewise, the willingness of the public to accept and use technology that is still unfamiliar and not comfortable for them to feel but accompanied by a number of reasons, facts, and promotions that put forward a number of benefits and ease of use (Davis, 1989; Venkatesh *et al.*, 2012), with the hope that it will invite public interest in trying and using the products offered. Some researchers also predict that a person's and community's tendency to be influenced by a series of contributing factors such as: their lifestyle, public

consumption behavior, environmental awareness and so on, all of which are still related to the motives of using the TRA or TPB model (Chen & Tung, 2014; Mishal *et al.*, 2017; Paul *et al.*, 2016; Sharma & Joshi, 2017) which emphasizes the behavior that motivates them. In the framework of TRA theory mentions the psychological aspects that cause human tendencies to plan, and do what makes them feel comfortable.

### Cybercrime

Crimes in cyberspace are sometimes carried out by a person or group who has a motivation behind it or there may be an effect after being processed unknowingly. Attacks that are carried out consciously can be considered as cyber crimes and have a serious impact on society in the form of economic disturbances, psychological disorders, threats to national defense, and so on (Saini *et al.*, 2012). This type of crime is felt to be the fastest growing while being very complicated in solving it without being based on the right framework (Poonia, 2014). In relation to cybercrime that occurred in Indonesia, it has been regulated in the Information and Electronic Transactions Law (UU ITE) Articles 27 and 28, but the implementation of the law is still not optimal until now, both understood and not understood. by the perpetrators. Cybercrime is actually all kinds of activities in the use of computer networks for criminal and/or criminal purposes by utilizing high technology by abusing the convenience of digital technology (Wahid & Labib, 2005). The threat that creates anxiety and concern is when the result of these actions eliminates a number of assets and someone's ownership of their rights, in a way that the owner is not aware of and knows about.

### Ease of system and use of internet banking

The virtual era is currently growing and developing rapidly, spreading in many parts of the world and replacing traditional manual technology, using modern technology (Halbouni *et al.*, 2016) which aims to make it easier for humans to carry out their activities and make it easier for them to do their work without big risk. The conveniences and benefits offered in virtual-based information systems should be a form of interest in using the system (Davis, 1989; Venkatesh *et al.*, 2012) which is useful for saving costs and accelerating activities carried out. Several researchers in Indonesia have previously studied the convenience aspect of online transaction interest and stated that it had a positive effect on interest in using it (Basyar, 2016; Dewi & Prihanto, 2018; Ezzi, 2014; Made *et al.*, 2016). However, the average research conducted does not include the dangers experienced by the use of internet banking by the threat of cybercrime, as stated by Salihu *et al.*, (2019), it is different that the ease of the system has a negative effect on interest in using internet banking by considering the problems involved. there is, however, based on the object of research conducted in Indonesia and referring to research and

phenomena that exist in Indonesia, the research hypothesis ( $H_1$ ) is stated that:

$H_1$ : The ease of the system offered will make people interested in using internet banking.

### Public trust and the use of internet banking

Trust is the initial belief in the start of a collaboration between parties, because the conditions for a collaboration to take place are based on trust so that business can run smoothly accompanied by an explanation of the calculations, mechanisms, and benefits they will get by using or taking a product, which has been proven (Akrouf, 2019). For this reason, the trust that arises from clients, customers or partners in business has a positive impact on their interest in choosing to use internet banking system products in transactions (Agustina *et al.*, 2018; Goudarzi *et al.*, 2013; Lestari, 2020; Sujana & Suprapti, 2016; Wibowo *et al.*, 2015), as banks also spend a lot of their money to provide internet banking service infrastructure for their customers, the lack of internet banking adoption can bring negative consequences for banks (Goudarzi *et al.*, 2013). To create a sense of trust from the public in a product, it is very important, with efforts made by banking companies to provide literacy to users who convince them to switch to using internet banking that has been provided in transactions (Nasution *et al.*, 2020), so the research hypothesis stated in  $H_2$ .

$H_2$ : The trust that arises from the community will have a positive influence on the use of internet banking.

### Security and use of internet banking

Information systems have a major impact on the sustainability of a business because most companies currently rely on information systems to support their business to produce reliable, relevant, timely, complete, understandable and tested information (Maharsi, 2000). In the information security system that needs to be known and built in a computer cloud system, there are 3 dimensions that are considered indicators, namely: confidentiality, integrity, and availability whose existence is useful in maintaining the continuity of activities and is very important in supporting its success (Dianta & Zusrony, 2019). Meanwhile, Salihu *et al.*, (2019) in their research show that the security and ease of use of electronic banking services have a negative effect on problems with electronic banking services, which means that with increased security and/or ease of use their problems are still unsatisfactory. For this reason, the role of a good quality and reliable information system is very much needed in increasing the volume of the number of internet banking users in the community (Kholid & Soemarso, 2018), so the research hypothesis put forward in  $H_3$ :

$H_3$ : A reliable information system has a positive effect on increasing the number of internet banking users in society.

## RESEARCH METHODS

This research was conducted using a quantitative approach through the collection of a number of survey data using virtual-based questionnaires utilizing google forms media distributed through the whatsapp application, and then filled in by the public, internet banking users and customer service from various state and private banks. planned as a sample. The questionnaire contains material about respondents' perceptions related to public interest as bank customers in using internet banking. The research population and sample are internet banking application users at several state banks such as BNI, Mandiri, and BRI as well as other private banks such as: BCA, Mega, Danamon and so on as the unit of analysis in this study, with the planned research time ranging from January - April 2021. The submission of the questionnaire is accompanied by various instructions and tips for filling out the questionnaire that prioritizes the basis for choosing to use internet banking, where the researcher emphasizes that filling is based on the aspect of choosing to use internet banking based on conditions that are being intensively attacked by cybercrime. Samples taken randomly totaled 127 answers to the questionnaire, but 120 of those taken were used through the verification stage, while 7 answers to the questionnaire could not be used because the answers did not match the circumstances or were outliers. The research questionnaire data processing was carried out using the multiple regression method of primary data with the help of the SPSS 25 analysis tool through a series of statistical procedures. The research data in the form of a questionnaire was previously processed using an instrument test, namely validity and reliability, it can be done by comparing  $r$  table *product moment* and  $r$  arithmetic, then in the research reliability test compares the Cronbach alpha value obtained with the value according to the value of the role of thumb, which is  $> 0.70$  (Nunnally, 1978).

### Measurement of Research Instruments

Measurement of research instruments using a Likert perception scale norm with the set perception values having the following intervals: 1 (strongly disagree), 2 (disagree), 3 (disagree), 4 (agree) and 5 (strongly agree). The measurement of research variables as the basis for making research instruments is based on previous research that has been carried out, and adopts several theories that are used for proxy measurement of variables as follows:

Ease of use aspects of ease of learning, ease of use and proper ease of operation based on opinion literacy TAM (Technology Acceptance Model) which measures user behavior and is supported by the understanding of the Unified Theory of Acceptance and Use of Technology or UTAUT-2 which measures the success of system implementation (Davis, 1989; Venkatesh *et al.*, 2012). Trust uses assumptions consisting of: overall trust, confidence in choosing and

the principle of openness (Butler, 1991). The security of using internet banking is measured using guarantees for data confidentiality and guarantees for security in product use (Raman & Viswanathan, 2011). The use of internet banking products is a proxy for motivation to interest which consists of: transactional interest, referential interest and preferential interest (Ferdinand, 2002).

## RESULT AND DISCUSSION

### Results

To determine the level of accuracy of the instruments used in the questionnaire, the validity and reliability of the research were tested as shown in Table 4.1, the results were stated in the measurement that the entire research instrument used and filled in by the respondents showed proper results according to the existing *role of thumb* with a total of 120 observations as follows:

**Table-4.1: Test Instrument Validity and Reliability**

Variable	Validity	Reliability	Description	Item
EASY	0.621 – 0.804 > 0.150	0.935 > 0.70	valid/reliable	12
TRUST	0.574 – 0.780 > 0.150	0.899 > 0.70	valid/reliable	10
SAVE	0.558 – 0.745 > 0.150	0.895 > 0.70	valid/ reliable	10
E_BANK	0.607 - 0.735 > 0.150	0.905 > 0.70	valid/ reliable	10

It can be concluded from the results of testing the validity and reliability that the research instrument used to test and construct a variable in this study has met the assumption of feasibility of validity, namely all validity values are greater than r table (0.150), and

reliability is set with a greater value. of 0.70 (Nunnaly, 1978) as a criterion value, for that with the feasibility of the results obtained, further testing can be continued in processing the hypothesis testing presented in Table 4.2.

**Tabel-4.2: Descriptive Statistics, Multiple Regression and Hypothesis Testing**

Variabel	Min	Max	Mean	Std. Dev	Variance	Regression Coefficient	t	sig
EASY	37	60	47,58	6,73	45,23	0,492	6.134	Accepted ****
TRUST	29	60	43,12	6,23	38,83	0,010	0,078	Declined
SAVE	35	60	43,78	5,58	31,16	0,280	2,238	Accepted **
E_BANK	30	54	38,59	5,40	31,16	-	-	-
Constanta	-	-	-	-	-	4.437	2.561	0,012
R =	0,762	-	-	-	-	-	-	-
Adj (R <sup>2</sup> ) =	0,755	-	-	-	-	-	-	-
F =	123.546	-	-	-	-	-	-	0,000
Observasi =	120							

NOTED :

**EASY : Ease of system**

**TRUST : Customer trust**

**SAVE : System safety**

**E\_BANK : Internet Banking**

**\*=0.10, \*\*=0.05, \*\*\* = 0.001, \*\*\*\*= 0.000**

The results of the distribution of questionnaire data with a total of 120 observations stated that the data obtained could be categorized in proper research data because they were normally distributed as indicated by the mean value greater than the standard deviation in table 4.2 in descriptive statistics, the values obtained from these results were distributed evenly. evenly with the range of values that represent the value of each observed variable.

The results of data processing with multiple regression analysis show that the overall model has a positive value but not all are acceptable, so that the determination of an acceptable hypothesis can be seen in H<sub>1</sub> and H<sub>3</sub> with different levels of significance. In H<sub>1</sub>

it states that the ease of the system has a positive and significant effect on the use of internet banking by customers so that the hypothesis can be accepted, H<sub>3</sub> states that security has a positive and significant effect on the use of internet banking so that the hypothesis can be accepted. While H<sub>2</sub> states that trust has no significant effect on the use of internet banking by customers so that the hypothesis cannot be accepted. For this reason, seeing the results of the coefficients of data processing can be shown in the multiple linear regression equation:

$$E\_BANK = 4,437 \alpha + 0,492_{EASY} + 0,010_{TRUST} + 0,280_{SAVE} + e$$

In the model fit test, it was stated that the combination of the research dependent variables influenced by the independent variables was able to determine 75.5%, which means that internet banking users on products issued by banking can be determined from the variables of system convenience, customer trust and system security. Other variables as a determinant of public interest in using internet banking can be determined beyond the observations in this study, namely 24.5% which has not been observed to be a variable that is not included in this study.

## DISCUSSION

The results of testing research hypotheses in statistical calculation procedures through questionnaire research instruments state that not all hypotheses can be accepted, because based on data processing carried out by researchers, research hypotheses two are unacceptable, while hypotheses one and three are accepted hypotheses with significant values. According to the *role of thumb* that is the reference.

### Ease of the system on interest in using internet banking

The results of data processing using statistical procedures prove that the ease of the system offered and provided by service providers affects public interest in using internet banking, so hypothesis H<sub>1</sub> is accepted. People in the modern era with a metropolis lifestyle are more likely to want speed in the work process or activities they do so they don't waste a lot of time, this is supported by the existence of smart phones which are currently developing rapidly, making their work easier. Application support that makes it easy for system users to attract them to take advantage of the applications offered (Davis, 1989; Venkatesh *et al.*, 2012) which brings success, because what happens from the effect of using applications on the system will save costs, time, and speed up activities carried out so as to create interest from several groups of people to use internet banking (Basyar, 2016; Dewi & Prihanto, 2018; Ezzi, 2014; Made *et al.*, 2016; Suh & Han, 2002). Despite providing convenience for users, internet banking is also vulnerable to cybercrime attacks through various means such as verifying the user's phone number using the Call Forwarding method and SIM Swap Fraud (Budiansyah, 2020), however, access to the convenience offered by these products does not dampen the public's desire. in using internet banking with various perspectives that have been planned in using the product (Ajzen, 1991) as well as the existence of certain motives behind the use of the application (Chen & Tung, 2014; Mishal *et al.*, 2017; Paul *et al.*, 2016; Sharma & Joshi, 2017) which relates to their behavior such as speed in transactions, practicality, efficiency, effectiveness and so on which are more dominant from the aspect of their needs. Meanwhile, Salihi *et al.*, (2019) argue that the ease of the system has a negative effect on interest in using internet banking which is related to a number of electronic problems related to

speed, security and slow handling, so that the system becomes an error (Salihi & Metin, 2017) and results in customer disappointment, and in the end this application product offering should be accompanied by an evaluation with a number of security that protects users and banks from cybercrime with maximum system protection.

### Customer trust in the use of internet banking

Data processing resulting from multiple regression statistical procedures states that trust does not affect the use of internet banking in the community, so research hypothesis H<sub>2</sub> is rejected. The results of the data output are also not in line with the previous research references used (Agustina *et al.*, 2018; Goudarzi *et al.*, 2013; Lestari, 2020; Suh & Han, 2002; Sujana & Suprapti, 2016; Wibowo *et al.*, 2015) However, this is in line with the opinion of Goudarzi *et al.*, (2013) which states that trust arising from clients who use banking services, customers, or partners in business has a negative impact and considerable losses on bank institutions if there is no interest from users in using banking services. Available internet banking products, the problem is because banks have invested and spent a lot of money to provide internet banking service infrastructure for their customers. The factor of user distrust is also due to doubts and concerns that exist in the community, it is caused by cybercrime attacks which have increased by 60% in the form of attacks *mobile banking trojan* very dangerous and were detected in digital banks, so based on the data there are 50% of the total number. There have been 1,408 mobile banking trojans blocked in 2020 (Belinda, 2021). The existence of the incident in mobile banking caused fear and doubt from the public to use internet banking, while the impact of handling cybercrime problems carried out was very difficult to trace and resolve so that losses were often suffered by users. The existing law regarding the regulation of virtual activities and internet transactions is still not felt to be able to overcome the problem of crime in this virtual world, for that people do not fully trust the use of this application and are actually accompanied by a sense of worry about the security of their assets that will be lost.

### System security against the use of internet banking

Among other factors that most determine the community's priority in using internet banking is the security factor, therefore security is the main guarantee for acceptance by users. A good information system must provide a sense of security and be able to guarantee that the product to be used will be fine in its use. The results of data processing on the security variable with statistical methods state that the security provided through the internet banking system can affect users in using internet banking by the public, so the research hypothesis H<sub>3</sub> is accepted. For this reason, people who interact frequently, and understand the risks of using internet applications, are aware of the dangers and risks they will receive when interacting with these

media. For this reason, the existence of a layered security level makes them feel calm and not worried, feel more comfortable, and feel satisfied if the application is accompanied by good system performance (Venkatesh *et al.*, 2012) in the form of maximum system security, where assets trust the bank is managed and maintained properly. This variable has a fairly strong interaction with trust, where trust will arise if the system administrator is able to guarantee the security of their assets stored in the bank including: confidentiality, integrity, and availability which are useful in maintaining the continuity of activities and are very important in supporting its success (Dianta & Zusrony, 2019), then produces information that is reliable, relevant, timely, complete, understandable, and tested (Maharsi, 2000). With the fulfillment of the need for security, it can be predicted that internet banking users in Indonesia will increase (Kholid & Soemarso, 2018; Suh & Han, 2002), this security becomes a planned motive (Ajzen, 1991) as stated in TRA from user psychology. Which makes these elements as the main tendency to choose to use internet banking.

## CONCLUSION AND IMPLICATION

### Conclusion

The study concluded that the trust that arises from users is not easy to obtain along with the development of cases of cybercrime attacks on digital internet from several existing banks, therefore the trust response from users does not show significant results. Meanwhile, the priority for users in utilizing internet banking is focused on the ease of operational systems that they are easy to understand and security that is quite convincing and becomes a guarantee for using the application. For this reason, it is found that the convenience and security factors of the application are variables that have a significant positive contribution and effect on public interest in using internet banking which is in line with TAM and the success of using the system (UTAUT2).

### Research Implications

The analysis that becomes the most important point generated in this research is that the psychological factor of internet banking application users has a dominant factor in determining the selection of the product, the feasibility assessment generated and shown through the performance of internet banking is able to give confidence to application users to choose it as a platform. Used in business and personal transactions. Their trust will be formed automatically if the service provider is able to provide a sense of comfort through the convenience and security guarantees for the system they use, for that the main key in attracting internet banking users is to first convince them of the advantages of the platform offered.

### Research Limitations

This research has a number of limitations that can be anticipated by further researchers, namely by

following up on this research through aspects, samples that can be expanded by increasing the quantity of internet banking users to make it more complex with criteria divided into various types of age and the work they are engaged in to get results. More specific. Meanwhile, the inconsistency of the respondents in filling out the questionnaire can be anticipated through a strategy to avoid a number of respondents from the internet banking provider bank which has the potential to cause a conflict of interest.

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