

IMPACT OF CYBER FRAUD, EASE OF USE AND RISK PERCEPTION ON THE BEHAVIOR OF USING E-COMMERCE SYSTEMS IN THE PANDEMIC ERA

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ABSTRACT

This study aims to determine the impact of cyber fraud, ease of use and risk perception on the behavior of using e-commerce systems in the pandemic era. This research was conducted using a quantitative approach or method (quantitative approach). The research population is a community of active users of e-commerce services who buy products online. The research method uses multiple linear regression. The sample was taken using a convenience sampling method so that there were 150 respondents. The results of the analysis for this model show that e-commerce usage behavior is positively influenced by ease of use and risk perception. Where as the perception of fraud in cyberspace is proven to have a negative effect on the interest in using e-commerce. These results indicate that during the pandemic the public preferred to shop online rather than face the risk of being exposed to Covid-19.

Keywords: Technology acceptance model; e-commerce behavior; Perception of cyber fraud; Perceived ease; Perceived risk.

INTRODUCTION

During the COVID-19 pandemic, the rapid growth of the e-commerce market share in Indonesia can no longer be doubted. The number of users in 2019 of 80 million or 30% increased sharply to 175.4 million from a total of 272.1 million people or around 64% of the total population in Indonesia. The e-commerce market is becoming a very tempting gold mine for some people to see the potential going forward. This growth is supported by Bank Indonesia data, which records the number of online trade transactions each month, reaching Rp 13 trillion in 2019. This amount will continue to rise along with the growth of smartphone usage, internet penetration in Indonesia, the use of debit and credit cards, and the level of consumer confidence to shop online. If we look at Indonesia as a vast archipelago, e-commerce is a market that has the potential to grow very large in Indonesia. In line with the statement of Matthew Driver, president of the MasterCard for the Southeast Asia region, Indonesia is one of the countries with the largest e-commerce market growth in Asia-Pacific. Although the number of sales in Indonesia is still low compared to other countries, seeing Indonesia's development is quite rapid, our beloved country may compete with other Asian countries that have previously produced e-commerce sales above Indonesia.

E-Commerce is the process of buying and selling products electronically by consumers and from company to company with a computer as an intermediary for business transactions relating to shopping transactions on Internet shopping. E-Commerce describes the broad scope of technology, processes, and practices that can carry out transactions without using paper as a means of transaction mechanism. E-Commerce has had a major

influence on the growth of the social and economic system of society. E-Commerce has become an important part of the private and public business sectors because of those E-Commerce companies targeted millennials to buying from their website. We can see the millennials are conducting shopping research online most of the time with their gadget. Because of this, a lot of online shopping companies targeted their market to the millennials generation. Millennial's generations are not even the second largest market leader. Frequency of baby boomers (born between 1946 and 1965) online shopping is the same as younger generations. The chart that illustrates spending per transaction shows further insight into the differences across generations, where Baby Boomers spend more than any generation. This phenomenon is contrary to the popular belief where the tech-savvy millennials were leading the e-commerce growth (Sanny & Gerardo, 2020). The development of the coronavirus pandemic, which has a very wide impact, and requires some people to limit activities outside the home, makes everyone dependent on the internet. Online shopping activity from home is the main choice for almost all family members in Indonesia.

The many benefits can be obtained if an individual or company is doing e-commerce, such as being able to reach customers throughout the world and easily market goods at lower costs in marketing. Moreover, with the development of telecommunications and computerized systems, it certainly greatly supports the smooth process of this e-commerce. However, in reality, this facility is not fully used by the people of Indonesia. Indonesian people still like to do transactions traditionally or face to face. Many of the individuals think that too much risk arises when doing e-commerce. The party who runs e-commerce itself needs to review and need to know what factors can influence the interest of individuals to use electronic transactions so that those who run an e-commerce or the company will better understand the factors that are the problem and improve the existing system.

Researchers analyzed what individual perception factors that influence transaction behavior through e-commerce. This study refers to previous studies (Rofiq, 2012; Shomad, 2013; Yutadi, 2014). According to Rofiq (2012) researched the impact of cyber fraud and trust on e-commerce systems on the interest to use e-commerce. His research indicates that the perception of Indonesian consumer cyber fraud negatively affects an interest in buying using e-commerce. According to Shomad (2013), perceived ease of use has a positive effect, while risk perception has a negative effect on interest in using e-commerce. According to Yutadi (2014) shows that perceived ease of use and perceived risk have a positive effect on interest in using e-commerce. This research carried out during the COVID-19 Pandemic period is expected to be able to complete and expand the economics section and can be used as a reference material for business practitioners, policymakers related to e-commerce and future research.

LITERATURE REVIEW

Impact of Perceived of Cyber Fraud on the Behavior of Using e-commerce

Online channels such as e-commerce are the main target of actors to increase fraud activities. In e-commerce, perpetrators can easily try fraudulent transactions because e-commerce is a unitary unlimited, has low costs, and has a high availability of stolen credentials. Clough (2010) argues that digital technology is vulnerable to crime, such as the nature of technology, including scalability, accessibility, anonymity, portability-transferability, global reach, and the absence of guardians. Evidence shows that money lost due to fraud in e-commerce increases and becomes large (Chuck, 2002) with victims from both customers and vendors (Clough, 2010). Thus, online fraud (cyber fraud) emerged as an

economic problem. The results of Rofiq (2012) showed that the perception of cyber fraud negatively influences the intention to use e-commerce systems. Amalia (2016) also states that cyberspace's perception of fraud negatively influences the interest in using e-commerce.

A study conducted by Bywell and Oppenheim (2001) reveals that transactions via e-commerce will lower prices. Moreover, consumers can easily compare prices, quality, service, and specification of products among buyers. However, fraud is still a potential threat in every transaction. Thus, vendors are encouraged to combat all fraudulent forms on the internet by improving their security systems. This is an effort to eradicate the growth of fraud and other problems for e-commerce transactions. Consumers' perceptions determine their intentions to use or not to use the internet as a medium to transact. Those who have confidence on the internet will use it to facilitate their business transaction. On the other hand, those who have fears will not use it. Therefore, understanding consumers' perceptions are very important for businesses to develop strategies for educating those (Rofiq & Mula, 2010). This research argues that the higher the perception of cheating will reduce the interest in using e-commerce. Thus the researchers formulated an alternative hypothesis as follows:

H1: Perceived of Cyber Fraud has a negative effect on e-commerce usage behavior

Impact Perceived Ease of Use on the Behavior of Using e-commerce

Davis (1989) defines the perception of convenience as the level where someone believes that the use of information technology is easy an impact perceived ease of use on the behavior of using e-commerce does not require much effort from the wearer. Individual perception related to ease of use (perceived ease of use) is where individuals believe that using a particular system will be free from errors. Research conducted by Istianingsih and Wijanto (2008); Shomad (2013); Yutadi (2014); and Istianingsih (2020) stated that perceptions of ease of use have positive effects on the interest and behavior of e-commerce usage. This study's results are not consistent with research conducted by Pavlou (2001), which states that the perception of ease of use (perceived ease of use) has no significant effect on the interest in using e-commerce systems. The results of research of Istianingsih and Wijanto (2008); Amalia (2016); and Iskandar and Istianingsih (2020) showed that the interest in using e-commerce is positively influenced by the construct of perceived ease of use. According to Lal (1999; 2005); and Nurunnisha and Dalimunthe (2018), an entrepreneur's qualification has a significant influence whereby the author measures the knowledge base as the qualification standard. The author also pointed out that the entrepreneur's qualification will impose a significant relationship in the degree of e-commerce or information technology adoption, and hence, perceived usefulness and perceived ease of use of e-commerce have a direct positive relationship to entrepreneur's qualification. The more the user perceives that using e-commerce is easy, the more intense he will use it. Thus this research proposes the first hypothesis as follows:

H2: Perceived Ease of use has a positive effect on e-commerce usage behavior

Impact Risk Perception on the Behavior of Using e-commerce

Risk can be defined as an undesirable event that is likely to cause the hazard to occur. It has a cause and a probability of occurrence (Kadmiri et al., 2021). Having defined risk, we will now orient our discourse around risk in an entrepreneurial project. Since online transactions are a recent phenomenon, they also involve the human reaction against new and unknown from the psychological point of view. Nyshadham and Ugbaja (2006) stress that a

new risk, as the Internet identity theft, is most likely perceived differently than the familiar risk of a storm. Consequently, the authors argue that EC's risk assessment is done without the precision that customers have developed for other familiar risks. Therefore, the statement of Ha (2002) and Pelău and Bena (2010) that the customer perception of EC risks is greater than the risk perception for classic trade is not surprising. Most of the possibility of fraud in online trading occurs because consumers do not know the risks. For this reason, we have investigated how consumers can find out the risks involved in Internet transactions. We call risk perception the way they know the risk of Internet transactions. Besides, how consumers understand the risks of Internet transactions can influence online buying behavior, meaning that the higher the risk, the lower the probability that consumer will buy on the Internet (Pelău & Bena, 2010; Werastuti et al., 2018; Siskawati et al., 2019).

According to Pavlou (2001), risk perception is considered an important barrier for consumers who are considering whether to make a business transaction online or not. However, according to Engel (1995), the greater the perceived risk the greater the possibility of economic actors' involvement in the use of the system. Saputra et al. (2021), conducted a study of a group of students who were members of an information systems course at the Duct Academic Institution. The study results mentioned that there is a very strong relationship between risk perception and the attitude of using online purchases. In a study by (Tran & Huy, 2019), risk perception influences the interest in using e-commerce systems. Respondents think that before making a transaction with the e-commerce web, they will collect information about the web. Based on this information, respondents can predict how much risk they face when going shopping online. The more positive information about web e-commerce the smaller the risk faced by respondents. Yutadi (2014) stated that actions to reduce or reduce the level of risk will affect attitudes and increase the use of e-commerce systems. Amalia (2016) shows that interest in using e-commerce is positively influenced by risk perception. This research proposes the following hypothesis:

H3: Perceived risk has a positive effect on e-commerce usage behavior

METHODOLOGY

Research related to the Impact of Cyber Fraud, Ease of Use, and Risk Perception on the Behavior of Using e-commerce Systems in The Pandemic Era, was carried out with a quantitative approach. This study's location is in the areas of Jakarta, Bogor, Depok, Tangerang, and Bekasi (Greater Jakarta). The object of this study is the Community Users of e-commerce services. This research was conducted using a quantitative approach or method (quantitative approach). The research population is a community of active users of e-commerce services who buy products online. The research method uses multiple linear regression, whereas the method of data collection with a questionnaire with a Likert scale approach. As for sampling with a convenience sampling method approach, research sampling is done selectively with data easily obtained, so researchers have the freedom to choose the fastest sample at a relatively low cost. In connection with the rules to limit physical contact in accordance with the rules of the PSBB (Large Scale Social Bounding) by the Indonesian government during the COVID-19 Pandemic researchers distributed e-mail questionnaires and Google friend forms to share with others. The number of questionnaires received back in the filled out state was 150. With the number of research parameters, in this case, the number of construct indicators as much as 18, the number of respondents as much as 150 is ideal. The distribution of questionnaires was carried out through research variables, namely, perceived

variables of cyber fraud, Perceived Ease of Use, Risk Perception, e-commerce usage behavior.

RESULTS AND DISCUSSION

Respondent's Profile

TABLE 1 PROFILE OF RESPONDENTS BY GENDER			
No.	Gender	Total	Percentage
1	Male	34	23%
2	Female	116	77%
Total		150	100%

Table 1 shows that male respondents totaled 34 people with a percentage of 23%, while female respondents totaled 116 people, with a 77% percentage. Thus, it can be concluded that most respondents are female respondents.

TABLE 2 PROFILE OF RESPONDENTS BY AGE			
No.	Age	Total	Percentage
1	<20 y.o	8	5%
2	20-29 y.o	142	95%
Total		150	100%

Based on Table 2, it can be seen that the number of respondents based on age amounts to 100 people. The respondents consisted of respondents aged less than 20 years totaling 8 people with a percentage of 5%, while respondents aged 20-29 years amounted to 142 people with a percentage of 95%. Thus, it can be concluded that most respondents are respondents aged 20-29 years.

TABLE 3 PROFILE OF RESPONDENTS BASED ON EXPERIENCE USING THE INTERNET			
No.	Experience Using Internet	Total	Percentage
1	< 5 years	14	9%
2	5-10 years	91	61%
3	> 10 years	45	30%
Total		150	100%

Respondents based on the experience of internet usage per year amounted to 100 respondents. Respondents with experience of internet use <5 years as many as 14 people or (9%), respondents with experience of using internet 5-10 years as many as 91 people or (61%), and respondents with experience of using the internet for more than 10 years for 45 people or (30%). Thus, it can be concluded that most respondents are with 5-10 years of internet use experience (Table 3).

Research Instrument Test Results

Validity test results

The following table shows the validity test results of the four variables used in this study: perceived cyber fraud, ease of use, Risk Perception, and E-commerce usage behavior with samples 150 respondents.

Question Item Number	Pearson Correlation	Sig (2-Tailed)	Result
1 (CF1)	0.782**	0,000	Valid
2 (CF2)	0.751**	0,000	Valid
3 (CF3)	0.708**	0,000	Valid
4 (CF4)	0.717**	0,000	Valid

Table 4 shows the perceived variable of cyber fraud has valid criteria for all question items with a significance value of less than 0.05 so that the perceived variable of cyber fraud can be used in research because it can reveal something that will be measured in this study.

Question Item Number	Pearson Correlation	Sig (2-Tailed)	Result
1 (PE1)	.691**	0,000	Valid
2 (PE2)	.829**	0,000	Valid
3 (PE3)	.803**	0,000	Valid
4 (PE4)	.657**	0,000	Valid

Table 5 shows the perceived ease of use variable has valid criteria for all question items with a significance value of less than 0.05 so that the perceived ease of use variable can be used in research because it can express something that will be measured in this study.

Question Item Number	Pearson Correlation	Sig (2-Tailed)	Result
1 (PR1)	0.685**	0,000	Valid
2 (PR2)	0.763**	0,000	Valid
3 (PR3)	0.574**	0,000	Valid
4 (PR4)	0.508**	0,000	Valid
5 (PR5)	0.687**	0,000	Valid
6 (PR6)	0.794**	0,000	Valid

Table 6 shows the perceived risk variable has valid criteria for all question items with a significance value of less than 0.05, so the perceived risk variable can be used in research because it can reveal something that will be measured in this study.

Question Item Number	Pearson Correlation	Sig (2-Tailed)	Result
1 (PP1)	0.686**	0,000	Valid
2 (PP2)	0.868**	0,000	Valid
3 (PP3)	0.775**	0,000	Valid
4 (PP4)	0.699**	0,000	Valid

Table 7 shows the e-commerce usage behavior variable has valid criteria for all question items with a significance value of less than 0.05, so the e-commerce system usage behavior variable can be used in research because it can reveal something that will be measured in this study.

Reliability test results

Variable	Cronbach's Alpha	Result
Perceived of Cyber Fraud	0.718	Reliable
Ease of Use	0.725	Reliable
Risk Perception	0.758	Reliable
E-commerce Usage Behavior	0.753	Reliable

Table 8 shows the value of Cronbach Alpha on the variable perceived of cyber fraud at 0.718, perceived ease of use at 0.725, perceived risk at 0.758, and e-commerce use behavior at 0.753. Thus, it can be concluded that the statements in this questionnaire are reliable because they have a Cronbach Alpha value greater than 0.7. This shows that each statement item used will obtain consistent data, which means that if the statement is submitted again, it will get an answer that is relatively the same as the previous answer.

Model conformity test

The coefficient of determination (R^2) test shows the amount of Adjusted R^2 value used to evaluate the best regression model.

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	0.492 ^a	0.253	0.227	2.433
a. Predictors: (Constant), TPR, TPE, TCF				
b. Dependent Variable: TPP				

Based on the results it can be seen that the Adjusted R square value obtained by 0.227 (22.7%) shows that 22.7% interest in using e-commerce systems is influenced by perceived of cyber fraud, perceived ease of use and perceived risk, while 77, 3% (100% -22.7%) interest in using e-commerce systems is influenced by other variables outside the variable model of this study (Table 9).

Model	Sum of Squares	df	Mean Square	F	Sig	
1	Regression	71.855	3	23.972	5.796	0.001 ^b
	Residual	396.905	146	4.334		
	Total	468.760	149			
a. Dependent Variable: TPP						
b. Predictors: (Constant), TPR, TPE, TCF						

F test results of 5.796 with a probability value of 0.001 means that the variable perceived of cyber fraud, perceived ease of use, and perceived risk significantly influence the behavior of e-commerce use simultaneously and show that this research model is fit with the data (Table 10).

Hypothesis Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	sig
	B	Std. Error	Beta		
Constant	9.806	3.194		5.013	0.000
TCF	-0.436	0.301	-0.406	-2.671	0.098
	0.371	0.198	0.363	3.780	0.007
	0.434	0.231	0.571	2.661	0.012

a. Dependent Variable: TPP

After testing the classical assumptions, and it has been proven that the data is free from the classical assumptions of normality, heteroscedasticity, multicollinearity, the data in this study are eligible for multiple regression analysis testing (Table 11). Multiple linear regression analysis was performed to determine the regression coefficient or the magnitude of the effect of the variable Perceived of Cyber Fraud (X1), Perceived Ease of Use (X2), Perceived Risk (X3) on the behavior of e-commerce use.

The effect of perceived cyber fraud on e-commerce usage behavior

The Perceived Cyber Fraud variable has a significant probability value of 0.098, so it can be concluded that the perceived cyber fraud does not influence the behavior of e-commerce use. So it can be stated that H1 was rejected. t-test results showed that the perceived variable of cyber fraud had a coefficient of -0.436, and a significance value of 0.098 was greater than the alpha value ($\alpha= 0.05$). This shows that the perceived variable of cyber fraud does not influence the behavior of the use of e-commerce systems. This shows that perceived cyber fraud does not preclude respondents' interest in making transactions using e-commerce systems. This study's results are not consistent with research conducted by Rofiq (2012), which states that the perceived cyber fraud has a negative influence on the interest in using e-commerce. Wall (2008) highlights that the news will reinforce fears to transact via e-commerce. Accordingly, it is important to present advantages and security systems on e-commerce transactions in the news. Consumers must know that fraud threats not only occurs in e-commerce but also occurs on the traditional transaction.

The influence of perceived ease of use on e-commerce usage behavior

Perceived Ease of Use variable has a significance value of 0.007, so it can be concluded that perceived ease of use has a significant effect on e-commerce usage behavior. So it can be concluded that H2 is accepted. t- test results showed that the perceived ease of use variable had a coefficient of 0.371, and a significance value of 0.007 was smaller than the alpha value ($\alpha= 0.05$). This means that the variable perceived ease of use affects the behavior of the use of e-commerce systems. This result is consistent with research conducted by Shomad (2013); Pradita and Zaki (2012); Iwan and Rahmahwati (2014); Yutadi (2014);

Istianingsih and Wijanto (2008); Iskandar and Istianingsih (2020). According to Davis (1989) adopts original rational behavior theory and planned behavior theory as a basis for his model and reinspecting the user's computer acceptance theory, thus proposing a technology acceptance model modification, proposing that perceived usefulness and perceived ease of use are important factors influencing user technology acceptance.

Based on the results of research conducted by researchers and based on research conducted by previous researchers, it can be concluded that the perception of convenience is a TAM variable that also has an important role in influencing interest in using e-commerce, in addition to the variable perception of usefulness. Companies or vendors need to pay attention to the services provided so that individuals can easily access the desired website to influence an individual to use e-commerce services continuously. Thus, it can be explained that the higher the ease that is obtained from the e-commerce system, the positive interest in using the system will arise from its users and lead to a greater desire to use the e-commerce system.

The effect of perceived risk on e-commerce usage behavior

Perceived Risk variable has a significant probability value of 0.012, so it can be concluded that Perceived Risk has a significant effect on e-commerce usage behavior. So it can be seen that hypothesis H3 is accepted. t-test results show that the perceived risk variable has a coefficient of 0.434, and a significance value of 0.012 is smaller than the alpha value ($\alpha = 0.05$). This means that the perceived risk variable has a positive effect on e-commerce usage behavior. These results are consistent with research conducted by Nazar and Syahrani (2008) and Krisnu Putra Yutadi (2014).

Yutadi (2014) researched individual factors that influenced the interest in using e-commerce. In his research, Yutadi (2014) states that risk perception has a significant influence on interest in using e-commerce. The more positive information about web e-commerce, the smaller the risk faced by respondents. Then the action to reduce or reduce the level of risk will affect attitude and will increase the use of e-commerce. Nazar and Syahrani (2008) researched the factors influencing privacy, security, trustworthiness, and experience of intentions to transact online. The results of the study mentioned that risk perception has a positive influence on attitudes to transact online. To minimize the level of risk faced by consumers, consumers try to collect information about online stores before making a transaction. Based on this information, the consumer can predict how much risk he faces. The greater the positive information obtained, the smaller the level of risk perceived so that the greater the likelihood of conducting transactions online.

Respondents think that before they make a transaction with the e-commerce web, they will collect information about the web. Based on this information, respondents can predict how much risk they face when going shopping online. The more positive information about web e-commerce, the smaller the risk faced by respondents.

CONCLUSIONS

Based on the results of the study, data analysis, and interpretation, the conclusions of this study are drawn as follows: Perceived cyber fraud does not significantly influence the behavior of e-commerce use. This shows that perceived cyber fraud does not prevent respondents from using the e-commerce system. Perceived ease of use has a positive effect on the behavior of the use of e-commerce systems. This shows that the higher the ease of getting from an e-commerce system, the positive interest to use it will arise from its users and

cause a greater desire to use e-commerce. The perceived ease of use factor is an element that is strong enough to shape the behavior of the use of e-commerce systems. Risk perception has a positive effect on e-commerce usage behavior. This shows that when someone knows what risks will occur when making transactions using e-commerce, the greater the desire to use e-commerce. Then the action to reduce or reduce the level of risk will affect attitudes and will increase the behavior of e-commerce use.

This research using the TAM model is used to assess the determinants of acceptance of an internet - based transaction system so that the service provider or web vendor can design an online transaction system program to be used as much as possible. This research has implications on the practice of designing and implementing e - commerce - based information systems. Thus, an existing system needs the management's attention so that the system can run according to the objectives set. This study's results can provide input for online businesses to pay attention to the perception of fraud in cyberspace, the level of risk perception when conducting online transactions, and the ease of online transactions. It is intended that online transactions in Indonesia develop better and as an alternative to buying and selling transactions.

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