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# Antecedents of user attitude towards e-commerce and future purchase intention

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<sup>a</sup>Universitas 17 Agustus 1945 (UNTAG) Semarang, Indonesia CHRONICLE ABSTRACT

Article history: Received: June 14, 2022 Received in revised format: July 28, 2022 Accepted: August 20, 2022 Available online: August 20 2022 Keywords: E-commerce Website Platforms Attitude to E-commerce Future Purchase Intention Technology Acceptance Model

This study attempts to analyze the antecedents of e-commerce user behavior and their effect on future purchase intentions. Theoretical exploration shows that the antecedents used in the behavior of e-commerce users are perceived self-efficacy, perceived ease of use and perceived usefulness. The study uses the behavior of e-commerce users as a mediating variable. The study was also conducted using a quantitative method, by distributing questionnaires to 250 e-commerce users in Indonesia. The analysis technique used is Structural Equation Modeling (SEM) with SmartPLS software. The results show that perceived self-efficacy had a positive effect on perceived ease of use and perceived usefulness. These three antecedents in turn have a positive and significant effect on future e-commerce shopping interest by using mediation of user behavior. The results are theoretically useful for deepening Technology Acceptance Model exploration by estimating future buying behavior and interest. Practically, this study encourages e-commerce platform website developers to increase the ease and usefulness to increase the positive behavior of users in purchasing products.

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### 1. Introduction

The rapid development of information technology (Fayad & Paper, 2015) has made internet users in the Asian region grow rapidly by 1,319 percent during 2000-2015 (Roza, 2016). According to Internet World Stats (2015) data, Asia's internet users currently reach 1.62 billion people with a penetration of 40.2 percent of the total population of 4 billion people. A total of 674 million Asian internet users come from China (Roza, 2016). If viewed from these data, if the growth rate of internet users in Indonesia continues to increase in the next few years, it is predicted that Indonesia will become one of the most important internet markets in the world. This makes the e-commerce market a very tempting gold mine for some who can see the potential ahead. Moreover, ahead of the implementation of the Asean free market (MEA) at the end of 2015, many observers predict that Indonesia will become a potential market for other countries to sell their goods (Nurmayanti, 2015). Indonesia, as one of the countries that has also experienced the COVID-19 pandemic since early March 2020, has had a major impact on all sectors of life, such as the tourism sector, the food sector and especially the economic sector. As for the economic sector, there are entrepreneurs who sell in shops, most of the shops are closed so that people find it difficult to meet their daily needs. The prohibition to leave the house makes the community's space to move narrow, even though it is precisely at times like this that the needs of life are increasing. To overcome this situation, people are starting to look a lot at online shopping activities, apart from not leaving the house, now many necessities of life are sold online. The implementation of work from home also has an impact on online buying interest. Apart from the need, interest in buying online is also influenced by several factors including price, ease of transaction, and trust in the interest in buying online. Price is the main factor that affects online purchases, the more affordable the price of an item, the more buying interest, usually the price of products offered online is cheaper than those offered offline. Another factor that influences buying interest online is the ease of transactions. Internet \* Corresponding author.

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© 2022 by the authors; licensee Growing Science, Canada. doi: 10.5267/j.ijdns.2022.8.007 users in everyday life for some people make it very easy to carry out their activities, not least in online purchase transactions. The ease of this transaction can be felt. When users want to shop online, the buyer only needs to be connected to an internet connection, wherever and whenever an online purchase occurs. The intensity of use and interaction between users and the system can also indicate ease of use. The commercial activity with the help of technology is known as E-commerce. E-commerce is the process of buying, selling, or trading data, goods, or services via the internet (Fazarriyawan, 2020). E-commerce is defined as a commercial transaction that involves the exchange of value through or using digital technology between individuals (Rizki, 2020). Media e-commerce involves using the internet and applications or browsers on mobile or mobile devices to transact business. The mobile platform is the latest development in the Internet infrastructure of various mobile devices such as smartphones and tablets via a wireless network (wifi) or cellular telephone service. At the beginning of the development of e-commerce, the only digital media was a web browser, but nowadays the more widely used media is through mobile applications (Laudon & Traver, 2017).

Indrayana et al. (2016) to make purchases online, consumers will make considerations such as searching for information about a product, or other alternatives, until finally deciding to make a purchase, the consideration process involves internal factors mentioned in the Theory of Planned Behavior (TPB). Planned. TPB proposed by Ajzen (1991), this theory is used to help predict individual behavior specifically. TPB mentioned several factors that influence individual interest, among others, attitude. Therefore, this study attempts to analyze the behavior of e-commerce users and their influence on future purchase intentions. The antecedents used for e-commerce user behavior are perceived self-efficacy, perceived ease of use and perceived usefulness.

# 2. Literature Review

According to Bandura (1994), self-efficacy is a self-assessment of a person's ability to execute a series of actions to achieve the desired goal. It can be said that self-efficacy does not emphasize the competencies possessed by individuals, but the individual's own assessment of the ability to use his skills to achieve goals. There are two factors that influence perceived self-efficacy, namely: Perceived Ease of Use refers to the perception that internet performance does not require additional effort, and Perceived Usefulness refers to the extent to which consumers believe that online shopping will provide access to useful information, facilitate comparisons for shopping, and enable shopping to be faster (Davis et al., 1989).

Self-efficacy has a significant influence on other perceptions such as ease of use, so it does not directly determine the final behavior (Hernandez et al., 2009). Self-efficacy is very important in the early online buying stage because in this phase, individuals must feel confident in their capacity to make online purchases every time and not just one transaction (Pavlou, 2003). Therefore, self-efficacy will increase the perceived ease of use and perceived usefulness of e-commerce users, the individual gains greater experience with e-commerce (Hernandez et al., 2009).

The results of Hernandez et al. (2009) showed that self-efficacy is an important perception for the development of e-commerce, because it has a positive effect on perceived ease of use and perceived usefulness. Venkatesh and Davis (1996) stated that self-efficacy is a significant determinant of perceived ease of use, it is related to the presence of initial support to show that self-efficacy can serve as an anchor for the initial perception of perceived ease of use, which can then be adjusted after user experience directly to reflect the characteristics of a particular system. The relationship between self-efficacy and perceived usefulness is to cause the impact of self-efficacy to motivate the expected results (Igbaria & Iivari, 1995). According to Igbaria & Livari (1995) individuals who have perceived self-efficacy will more easily predict a system and use it. Therefore, self-efficacy will affect the beliefs and behavior of the product and will affect the use of the system directly or indirectly for perceived ease of use and perceived usefulness.

# H1: Perceived self efficacy influences perceived ease of use of e-commerce.

# H<sub>2</sub>: Perceived self efficacy influences perceived usefulness of e-commerce.

Perceived ease of use is the degree to which potential users expect the new system to be used without requiring a hard effort (Davis, 1989). Consumers who feel that shopping on e-commerce will not free themselves from effort are less likely to develop a positive attitude to shop on e-commerce, while consumers who feel that shopping on e-commerce will free themselves from effort will have the possibility are more likely to develop positive attitudes to shopping in e-commerce (Barkhi & Walace, 2007). Watchravesringkan et al. (2010) state that consumers who have a high perceived ease of use for a product tend to display a positive attitude towards the use of the product. This is because consumers tend to judge the effort they have to expend to learn and use the product in order to improve the performance (Ashraf et al., 2014). With experience, users may be able to overcome concerns about perceived ease of use. This shows that perceived ease of use has a strong influence on attitudes for experienced users. According to Lee (2009) perceived ease of use has a positive influence on attitude towards e-commerce. Akturan & Tezcan (2012) stated that perceived ease of use has a positive influence on one's attitude towards e-commerce. This is also supported by Aboelmaged (2010) that perceived ease of use has a positive influence on one's attitude towards e-commerce in using a system.

# H<sub>3</sub>: Perceived ease of use of e-commerce influences attitude to e-commerce.

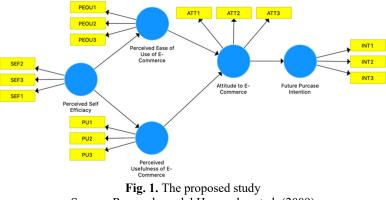
Perceived usefulness is the degree to which a person believes that using a particular system will further improve the performance of the performance carried out (Davis, 1989). Consumers generally have a positive attitude towards a product or service that they believe that the product or service has the desired use and consumers also have a negative attitude towards the product or service that they believe that the product or service does not have the desired use. This shows that the greater the usefulness obtained from a product or service, the higher the possibility that consumers will develop a positive attitude in making purchases in e-commerce (Barkhi & Wallace, 2007). Watchravesringkan et al. (2010) reveal that someone who has a high perceived usefulness of something will show a good attitude towards the use of the product, at the same time, consumers with a good perception will tend to use the product as often as possible to experience pleasure with the product. Perceived usefulness may have a relatively different effect depending on experience. With experience, users may be able to focus their attention on perceived usefulness. This shows that perceived usefulness has a strong influence on attitudes for experienced users. According to Aboelmaged (2010) perceived usefulness has a positive influence on attitude towards someone in using a system. Akturan & Tezcan (2012) stated that perceived usefulness has a positive influence on attitudes towards ecommerce. This is also supported by Lee (2009) that perceived usefulness has a positive influence on attitude towards ecommerce.

### H<sub>4</sub>: Perceived usefulness of e-commerce influences attitude to e-commerce.

Attitude toward e-commerce is defined as the user's evaluation of the desire to use a system (Akturan & Tezcan, 2012), while Intention to Purchase is the possibility of consumers to buy an item or service in the future (Chinomona et al., 2013). So, in other words, if the individual has positive feelings towards shopping at e-commerce then the individual has a strong choice to shop at e-commerce sites, whereas if the individual has negative feelings towards shopping at e-commerce, then the individual has no choice. strong for shopping in e-commerce (Barkhi & Wallace, 2007; Al-Gahtani, 2011). Lee (2007) research states that if consumers have a positive attitude towards e-commerce are expected to positively affect consumers' purchase intentions. According to Limbu et al. (2012), a more positive consumer attitude towards a website will be more likely to make a purchase or visit a website in the future. According to Vijayasarathy (2004) consumers who believe that using technology can give positive results tend to have a more favorable attitude towards it, there is a positive relationship between consumers towards online shopping purchase intentions. This is also supported by Akturan & Tezcan (2012) which states that attitude towards e-commerce has a positive influence on purchase intention.

#### H<sub>5</sub>: Attitude to e-commerce influences future purchase intentions.

Based on the description of the literature review and previous research, the framework of thought developed in this study is described in a chart as follows:



Source: Research model Hernandez et al. (2009)

#### 3. Method

In this study, the role of the independent variable is perceived self-efficacy. In this study, the intervening variables are perceived ease of use of e-commerce, perceived usefulness of e-commerce, and attitude to e-commerce. In this study, the dependent variable is future purchase intention. The population used in this study is e-commerce in Indonesia. In this study, the data collection method was carried out by distributing questionnaires or questionnaires. Respondents were taken using a purposive sampling technique (Sekaran & Bougie, 2016). The respondents of this research are small and medium scale entrepreneurs who carry out production and retail activities. This study was conducted using a quantitative method, by distributing questionnaires to 250 e-commerce users in Indonesia. In this study, the process of distributing questionnaires obtained 210 respondents returning the questionnaires. With 210 questionnaires returned, the return rate was 84 percent. All respondents were from micro, small and medium enterprises in Semarang, Indonesia. All items in this questionnaire were measured using a 7-point Likert scale (1=strongly disagree; 5=strongly agree). The data analysis method used is the Partial Least Square (PLS) analysis method with the Smart Partial Least Square 3.2.7 program. The tests carried out in the analysis of variance-based SEM have two stages, namely the outer model and the inner model test.

# 4. Results

Table 1 shows that the validity value of each indicator is above 0.7, so all research indicators are declared valid. In the outer model test, in addition to the convergent validity test, there is also a reliability validity test, namely a test that aims to determine the reliability of indicators in measuring variables, while a variable is said to be valid if it has an AVE value above. 0.5 and the Cronbach Alpha value is above 0.7, the following is the discriminant validity test in this study (Purwanto et al., 2021).

# Table 1

Validity, Reliability, R2, and Q2 Test Result.

Variable	Indicator	Loading	Cronbach's Alpha	CR	AVE	$\mathbb{R}^2$	$Q^2$
Perceived Self efficacy	SEF2	0.888	0.842	0.905	0.760		
	SEF3	0.880					
	SEF1	0.848					
Perceived Ease of Use of E-Commerce	PEOU1	0.796	0.821	0.890	0.730	0.117	0.074
	PEOU2	0.855					
	PEOU3	0.909					
Perceived Usefulness of E-Commerce	PU1	0.892	0.834	0.899	0.749	0.152	0.108
	PU2	0.878					
	PU3	0.826					
Attitude to E-Commerce	ATT1	0.863	0.807	0.885	0.721	0.239	0.166
	ATT2	0.810					
	ATT3	0.872					
Future Purchase Intention	INT1	0.751	0.856	0.913	0.781	0.256	0.190
	INT2	0.923					
	INT3	0.962					

Table 1 shows that all Cronbach alpha values and the average variance extracted exceed the minimum limit so that all variables are declared valid. From Table 1, R square it can be concluded that 11.7% of perceived ease of use of e-commerce is influenced by perceived self-efficacy, while the remaining 88.3% is influenced by other variables outside the study. The variable perceived usefulness of e-commerce is influenced by perceived self-efficacy by 15.2% while the remaining 84.8% is influenced by other factors outside the theme of this study. Attitude to e-commerce variables is influenced by perceived self-efficacy, perceived ease of use of e-commerce, and perceived usefulness of e-commerce by 23.9% while the remaining 76.1% is influenced by other factors outside the theme of this study. Future purchase intention variables are influenced by perceived self-efficacy, perceived ease of use of e-commerce, perceived usefulness of e-commerce, and attitude to e-commerce by 25.6% while the remaining 74.4% is influenced by other factors outside the theme of the results being shown in Table 2. The analysis of fit test showed that the data is fit for all indices. Thus, the data is eligible for further processing of hypothesis testing.

#### Table 2 Fit Model

	Saturated Model	Estimated Model	
SRMR	0.092	0.218	
d ULS	1.007	5.708	
d_G	0.627	1.080	
Chi-Square	763.468	1029.612	
NFI	0.714	0.614	

# 3.2 Inner Model

Hypothesis testing in this research is done by bootstrapping the research model. Furthermore, it can be seen the value of T Statistics or P Value of each latent variable. This study uses (alpha) of 5%. This analysis was conducted with the intention of knowing how big the level of significance of the influence of exogenous variables on endogenous variables. The following is the result of calculating the path coefficients of this research model (Table 3).

# Table 3

Direct, Indirect, and Total Effect Test Result

	(0)	(M)	(STDEV)	TValue	<b>PValue</b>
Perceived Self efficacy $\rightarrow$ Perceived Ease of Use of E-Commerce	0.341	0.349	0.061	5.635	0.000
Perceived Self efficacy → Perceived Usefulness of E-Commerce	0.390	0.390	0.047	8.224	0.000
Perceived Ease of Use of E-Commerce → Attitude to E-Commerce	0.241	0.235	0.070	3.419	0.001
Perceived Usefulness of E-Commerce → Attitude to E-Commerce	0.346	0.355	0.064	5.432	0.000
Attitude to E-Commerce $\rightarrow$ Future Purchase Intention	0.506	0.510	0.049	10.397	0.000

A formative construct will be declared significant if it has a P value smaller than the 5% significance value (P Value < 0.05) and has a T statistic value > 1.96. moreover, Table 4 showed that the influence of the relationship between Perceived Self Efficiency on the Perceived Ease of Use of E-Commerce; Perceived Self efficacy on Perceived Usefulness of E-Commerce; Perceived Ease of Use of E-Commerce on Attitude to E-Commerce; Perceived Usefulness of E-Commerce on Attitude to E-Commerce; Attitude to E-Commerce towards Future Purchase Intention (OP) has a P Value < 0.05 and a T Statistic value > 1.96, so it is accepted (significant).

### Table 4

Indirect Effect Test Result

	(0)	(M)	(STDEV)	TValue	PValue
Perceived Self efficacy $\rightarrow$ Perceived Ease of Use of E-Commerce $\rightarrow$ Attitude to E-Commerce	0.082	0.082	0.029	2.816	0.005
Perceived Self efficacy $\rightarrow$ Perceived Usefulness of E-Commerce $\rightarrow$ Attitude to E-Commerce	0.135	0.139	0.032	4.283	0.000
Perceived Ease of Use of E-Commerce $\rightarrow$ Attitude to E-Commerce $\rightarrow$ Future Purchase Intention	0.122	0.120	0.040	3.074	0.002
Perceived Usefulness of E-Commerce $\rightarrow$ Attitude to E-Commerce $\rightarrow$ Future Purchase Intention	0.175	0.182	0.043	4.092	0.000
Perceived Self efficacy $\rightarrow$ Perceived Ease of Use of E-Commerce $\rightarrow$ Attitude to E-Commerce $\rightarrow$ Future Purchase Intention	0.042	0.042	0.017	2.495	0.013
Perceived Self efficacy $\rightarrow$ Perceived Usefulness of E-Commerce $\rightarrow$ Attitude to E-Commerce $\rightarrow$ Future Purchase Intention	0.068	0.071	0.020	3.405	0.001

In this study, the intervening variable test was carried out by bootstrapping the research model by looking at the value of T Statistics and P Value on the specific indirect effects test so that it can be seen how influential/significant the intervening variable is between the independent variables on the dependent variable as an indirect relationship. From the test results in Table 3, it can be seen that perceived ease of use of e-commerce mediates the effect of perceived self-efficacy on attitude to e-commerce; Perceived usefulness of e-commerce mediates the effect of perceived self-efficacy on attitude to e-commerce on future purchase intention; Perceived ease of use of e-commerce and attitude to e-commerce mediate the effect of perceived self-efficacy on future purchase intention; Perceived usefulness of e-commerce and attitude to e-commerce mediate the effect of perceived self-efficacy on future purchase intention; Perceived usefulness of e-commerce and attitude to e-commerce mediate the effect of perceived self-efficacy on future purchase intention; Perceived usefulness of e-commerce and attitude to e-commerce mediate the effect of perceived self-efficacy on future purchase intention; Perceived usefulness of e-commerce and attitude to e-commerce mediate the effect of perceived self-efficacy on future purchase intention; Perceived usefulness of e-commerce and attitude to e-commerce mediate the effect of perceived self-efficacy on future purchase intention; Perceived usefulness of e-commerce and attitude to e-commerce mediate the effect of perceived self-efficacy on future purchase intention.

### 4 Discussion

Perceived Self Efficacy has an influence on Perceived Ease of Use. This shows that e-commerce can give consumers confidence that e-commerce can help them find the products they want. This can increase confidence in the capabilities of the ease of using e-commerce. This finding is also supported by Venkatesh and Davis (1996) which states that self-efficacy is a significant determinant of perceived ease of use. Perceived Self Efficacy has an influence on Perceived Usefulness. This shows that the confidence that consumers have when accessing e-commerce feels that its use is very useful and can make consumers get the products they want more quickly and practically so that they can provide benefits to e-commerce consumers when using them. This is also supported by Igbaria and Livari (1995) which states that individuals who have perceived self-efficacy will more easily predict a system and use it.

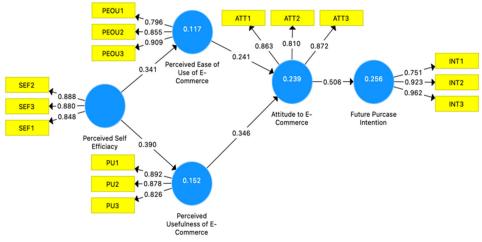


Fig. 2. Structural model of hypothesis testing

Perceived Ease of Use has an influence on Attitude Towards E-commerce. This shows that e-commerce provides convenience and does not require a lot of effort and time in finding and purchasing products. E-commerce is designed to be very easy to

use from the beginning of the search process to purchase, so the behavior of respondents who want to use e-commerce will be high if it is easy to use. This is also supported by Aboelmaged (2010) which states that perceived usefulness has a positive influence on attitude towards someone in using a system. Perceived Usefulness has a significant influence on Attitude towards e-commerce. Usefulness in accessing e-commerce websites has an influence on the behavior of e-commerce users. The results of this study strengthen or match previous research, namely research conducted by Watchravesringkan et al. (2010); where someone who has a high perceived usefulness of something will show a good attitude towards the use of the product. Attitude towards e-commerce has an influence on Purchase Intention. This shows that if someone's behavior is high towards an ecommerce then someone will assume that the e-commerce has a good view of the sales and buying process, then consumers will have the intention to buy products on the e-commerce website. The results of this study strengthen or match previous research, namely research conducted by Lee (2007); Imelda and Huwaida (2014), Marhaini (2008), Intan (2013); Limbu et al. (2012); Vijayasarathy (2004); Akturan & Tezcan (2012) where in this study and this study have in common that attitude has a relationship with consumer buying interest.

### 5 Conclusion

Based on data analysis, it can be concluded that perceived self-efficacy has a positive effect on perceived ease of use and perceived usefulness. These three antecedents in turn have a positive and significant effect on future e-commerce shopping interest by using mediation of user behavior. The results are theoretically useful for deepening TAM exploration by estimating future buying behavior and interest. Practically, this study encourages e-commerce platform website developers to increase the ease and usefulness to increase the positive behavior of users in purchasing products. There are several shortcomings in this study, including the lack of investigation of the degree of company involvement in online marketing. This study is limited to analyzing the role of SME managers and owners in online business penetration. In addition, this study is limited to only being carried out in the context of SMEs in an urban environment. Further studies are expected to analyze the degree of company involvement in digital marketing as a consideration to explore the antecedents of user behavior and future intentions. Furthermore, further studies are expected to expand the sample base to a wider range of SMEs.

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