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THE INFLUENCE OF E-COMMERCE ADOPTION AMONG GENERATION Z DURING THE COVID-19 PANDEMIC

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ABSTRACT

At the beginning of 2020, Indonesia was fighting a virus that shocked the world, namely COVID-19. Every day the spread of the virus continues to increase. So that the government applies various ways so that the virus does not spread quickly, the ways the government is doing include social distancing, health protocols, working from home, and self-isolation. With a situation like this, some sectors are up for improvement such as online services, especially e-commerce. E-commerce is an online shopping platform that can meet our needs when we are not allowed to leave the house if there is nothing important. This study aims to obtain a significant variable regarding the acceptance of server-based e-commerce users in Indonesia, especially for Generation Z by adopting the UTAUT model and adding one mediating variable, namely Trust. This study uses quantitative research by distributing online questionnaires with 30 questions, taking a sample of 237 respondents, and using SmartPLS 3.3.3 (Partial Least Square-Structural Equation Model). The results of this study, that of the seven hypotheses proposed, two hypotheses were declared non-significant influence (performance expectancy to trust and performance expectancy to behavioural intention to use), while the other five hypotheses were stated positive significant influence and accepted.

Keywords: E-commerce; UTAUT; COVID-19; Performance Expectancy; Effort Expectancy

INTRODUCTION

Hutauruk (2020) seeing the increasing population growth and consumption patterns that are classified as consumptive are increasingly growing the interest of providers of goods and services, especially in meeting basic needs that support consumption. Based on the BPS (*Badan Pusat Statistik*), Indonesia's population in 2020 will reach 271 million people or an increase of 10 million from last year's population. By 2035, Indonesia's population will exceed 300 million. The population growth rate for the 2010–2035 period is predicted to decline. Increased public education, awareness of regulating the spacing of children, as well as changes in lifestyle make population growth tend to slow down. In the 2010–2015 period, the population growth rate was 1.38 percent and then decreased to 1.19 percent in the 2015–2020 period (BPS, 2017). In this era of globalization, information technology has grown rapidly. The world of technology in the field of information as well as the internet has indeed developed in Indonesia very quickly (Allaudin, 2024).

The Indonesian Internet Users Association released the results of a survey of internet users in Indonesia, in 2019–2020 (Q2), the total number of Indonesian internet users currently reaches 196.7 million users with a penetration of 73.3 percent of the total population, which is approx. 266.9 million (Herman, 2020). However, along with the development of the internet in Indonesia, the spread of COVID-19 has also increased. According to the World Health Organization (WHO), Corona Virus Disease is a group of viruses that can cause disease in animals and humans according (Fabius et al., 2020). Several attempts have been made by the government to handle the spread of the COVID-19 virus, including implementing Large-Scale Social Restrictions (PSBB) in stages in areas indicated to accelerate the spread of the COVID-19 virus.

The implementation of PSBB has a significant impact on community activities, where people's needs shift to using e-commerce to shop for various needs. The use of e-commerce also implements the government's call to limit the use of cash or paper, as well as preventing crowds in public areas (Fatoni et al., 2019). These social restrictions make people carry out various activities through e-commerce (Silalahi & Purba, 2020). The latest e-Conomy SEA report from Google, Temasek, and Bain & Company, “At full velocity: Resilient and Racing Ahead”, predicts that the value of the Indonesian e-commerce sector will grow 54 percent to reach 32 billion US dollars or around Rp 454 trillion in Indonesia inn 2020. Then in 2019, the value of the e-commerce sector is known to be 21 billion US dollars. The number of local suppliers has also increased five times from the people who try to sell online in e-commerce. In the next five years, the growth of e-commerce projected to reach 21 percent. “E-commerce remains one of the largest elements of the internet economy compared to other internet services,” said Randy Jusuf, Managing Director of Google Indonesia (Pertiwi & Yusuf, 2020).

Venkatesh et al. (2012) in the Unified Theory Acceptance and Use of Technology (UTAUT) theory identifies four factors that influence behavioral intention, or a person's desire to determine his behavior in making decisions to buy products on an online site. The UTAUT model shows that the intention to use a particular technology (e-commerce) is influenced by the presence of performance expectancy, social influence, effort expectancy, and facilitating condition. First, performance expectancy is users are able to understand the current advances in information technology and can order products online while saving the time needed to shop. Second, effort expectancy is that users get convenience when accessing e-commerce websites, so that interest in buying products online increases because of the ease of operation. Third, social influence is that a user believes that other people who have experience in online transactions can influence a person's intention to conduct online transactions on an e-commerce

site. Last, facilitating the condition is the level of available infrastructure that supports system operations, namely conducting online transactions in e-commerce, for example the availability of laptops or PCs, mobile devices, and network Internet.

Therefore, this study investigates the behavioral intentions that drive e-commerce use during the COVID-19 pandemic. We analyzed the influence of the behavioral intention to use motives, which were previously found to influence behavior when using e-commerce, apply in the current situation, namely COVID-19. In addition, we analyzed the influence of the behavioral intention to use whether performance expectancy, social influences, and effort expectancy could influence behavioral intention. We complement our study with a comparison of means to investigate how quarantine as a measure of social distance and sociodemographic characteristics influence behavioral intention to use e-commerce.

LITERATURE REVIEW

Performance Expectancy

As stated by Davis et al. (1989) performance expectation is an individual's belief in using a system that can improve his performance. Venkatesh et al. (2003) defines performance expectancy as the degree to which an individual believes that using the system will help in improving his performance. Statements made by the same person but in different years Venkatesh et al. (2012) that performance expectancy are the main impetus for the intentions and behavior of technology users. It is the acceptance of consumers and users of technology or other drivers that are emerging at the fore. Performance expectancy in this paper is the extent to which users perceive that using electronic commerce applications can help them achieve their goal of buying a product/service (Putri & Jumhur, 2019). By looking at the profits generated from the use of information technology, there is interest in the use of information technology by users to improve their performance (Christiono & Brahmana, 2018).

H^1: There is performance expectancy that has a positive significant influence on trust of used e-commerce.

H^5: There is performance expectancy that has a positive significant influence on behavioral intention to use of used e-commerce.

Effort Expectancy

In accordance with Venkatesh et al. (2003) defines effort expectancy as the level of ease that an individual feels related to the use of the system. While in the context of internet banking in research Tarhini et al. (2016) if users find the service easy to use and does not require much effort then they are more likely to adopt. Effort expectancy is the level of ease of use of the system that will be able to reduce the effort (energy and time) of individuals in doing their work (Lestari, 2020).

H^2: There is effort expectancy that has a significant influence on trust of used e-commerce.

H^6: There is effort expectancy that has a significant influence on behavioral intention to use of used e-commerce.

Social Influence

As stated by Venkatesh et al. (2003) social influence is a condition where a person feels that family, friends and other closest people must use the new system. Tarhini et al. (2016) argues that social influence is oriented towards social pressure which is the external environment that surrounds the individual and can influence his perception and behavior to take certain actions such as the opinions of friends, relatives and superiors.

H^3: There is social influence that has a positive significant influence on trust of used e-commerce.

H^7: There is social influence that has a positive significant influence on behavioral intention to use of used e-commerce.

Trust

In pursuance of Putri & Jumhur (2019) trust of online shopping users can be built if the system can be trusted and the system can have a good reputation. The system can be trusted if the interaction between the user and the system goes well. While reputation helps increase trust when users have never interacted before. Buyer trust is influenced by the popularity of an online shopping site, where shopping sites are more popular, will be more trusted (Cherry & Cairns, 1982). Pursuant to the statement by Romla & Ratnawati (2018) trust plays a very important role in building relationships, especially in buying through social networking sites as well as in service businesses that are full of risk and lack of information between the seller and the buyer.

H^4: There is trust that has a positive significant influence on behavioral intention to use of used e-commerce.

Behavioral Intention to Use

Behavioral intention is defined as the level of desire or intention of users to use the system continuously with the assumption that they have access to information. Using behavior is defined as the intensity and/or frequency of users. This behavior is related to using information systems (Moerti et al., 2015). Behavioral intention is the perception of an individual's willingness to perform or adapt to a behavior in using a technology system (Putra & Baridwan, 2020). Therefore, in this study, behavior was used as the dependent variable, the last one being the relationship between behavioral intention and use behavior was ignored (Mustaqim et al., 2018).

Theoretical Framework

In this research, the researchers will provide and give the results carefully and objectively. Based on the explanation on the background and previous research, in this study the researchers will propose the theoretical framework of variables are shown in the below:

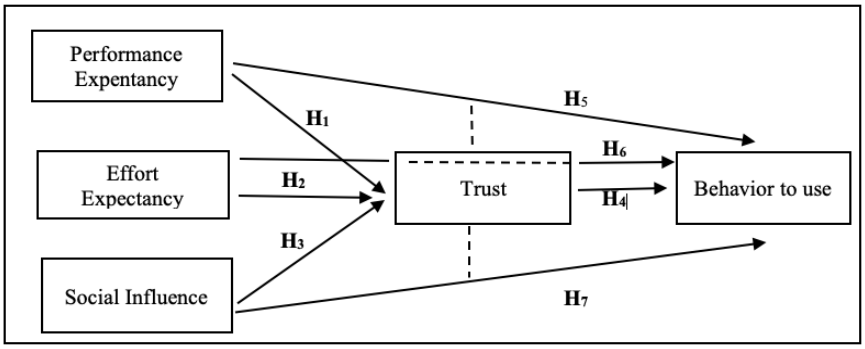

Figure 1. Theoretical Framework

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RESEARCH METHOD

The researchers decided to use quantitative method in this research by spreading questionnaires to collect data and analyze the relationship between the variables that have been proposed. The population is also not just the number of objects and subjects studied but includes all the characteristics or properties possessed by these objects or subjects (Sugiyono, 2017). This population in this study will be people who have ever using e-commerce platforms (Shopee, Tokopedia, Lazada, Bukalapak, etc.) during the COVID-19 Pandemic. The online questionnaire is created and distributed to people who live in Indonesia, especially those aged 17-21 years old (Millennial Generation). Thus, this research is using non-probability sampling, and the researchers used snowball sampling. The non-probability technique makes it possible to take a sample from a population whose elements are not limited in number. Snowball sampling is a determination technique that starts small, then grows (Sugiyono, 2017).

RESULTS AND DISCUSSION

Respondent Profile

The respondent result consists of 237 respondents which the number of female respondents is more dominant than the male respondents. Female 166 respondents that have collected from the questionnaire (70%) than for male 71 respondents (30%). It means that females are more use e-commerce more often during COVID-19 than males. Second, based on the data that has been collected by using Google Form online, the respondents who filled the questionnaire were dominated by Generation Z range age between 17–21 years old with a total of 237 respondents with the percentage of 100%. And last, the data by respondent occupation in the research from the results of the respondent's occupation data that has been collected by researchers, the most dominant respondents are students, as many as 192 respondents with a percentage of 81%, the rest are employees and entrepreneurs.

Descriptive Analysis

Table 1. Descriptive Analysis Result

Indicators	Mean	Std. Deviation	Result
Performance Expectancy (PE)	4.248	0.841	Strongly Agree
Effort Expectancy (EE)	4.506	0,644	Strongly Agree
Social Influence (SI)	4.139	0,915	Agree
Trust (T)	4.267	0,783	Strongly Agree
Behavior Intention to use (BI)	4.364	0,746	Strongly Agree

Based on table 1, overall results show that respondents agree with all statements for each variable. The average value for Performance Expectancy (PE) is 4,248, for Social Influence (SI) is 4,139, for Trust (T) is 4,267, and the last is Behavioural Intention (BI) has an average value of 4,364. However, specifically for the Effort Expectancy (EE) variable, it also has high results and the answer from the respondents is agree, with an average value of 4,139. Thus, the answers from the respondents strongly agree that all variables including Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Trust (T) can have an impact on Behaviour Intention (BI) on e-commerce during the Pandemic COVID-19.

Outer Model Analysis

As stated by Irwan & Adam (2015) designing a measurement model (outer model) that is designing the relationship between latent variables and their indicators. In PLS the design of the outer model is very important, reflexive or formative. In outer model analysis consists of convergent validity, discriminant validity, and composite validity. The researchers use SmartPLS 3.3.3 version to calculate and measure the data. For conceptually similar construct HTMT< 0.90, for conceptually different constructs: HTMT< 0.85, and last for the test whether the HTMT is significantly lower than the threshold value (Hair et al., 2019). If the HTMT ratio meets the requirements then it can be considered as discriminant validity fulfilled. Threshold value for HTML is<1.00 (Gaskin et al., 2018).

Table 2. HTMT Ratio Result

	BI	EE	PE	SI	T
BI					
EE	0.778				
PE	0.736	0.850			
SI	0.793	0.786	0.782		
T	0.866	0.801	0.715	0.885	

Reliability and AVE Result

A usual lie between these limits can serve as a good representation of the reliability of the construct's internal consistency, assuming that the factor model is correct. Recommended 0.70-0.90 Test whether the reliability of internal consistency is significantly higher (lower) than the recommended minimum (maximum) threshold (Hair et al., 2019). Therefore, the result indicates that each variable has met the construct reliability so that it can be concluded that all variables have a high level of reliability in this research.

The metric used for evaluating a construct's convergent validity is the Average Variance Extracted (AVE) for all the items on each construct. To calculate the AVE, one must square the loading of each indicator on a construct and compute the mean value. An acceptable AVE is 0.50 or higher indicating that the construct explains at least 50% of the variance of its items (Hair et al., 2019).

The results of the AVE value of all variables have a value greater than 0.5. This implies that each in the framework reflects or can account for 50% or more of its items. All latent variables also meet the requirements of convergent validity and are considered all valid variables.

Table 3. Cronbach's Alpha, Composite Reliability and AVE Result

Variable	Cronbach's Alpha	Composite Reliability	AVE Result	Result
Behaviour Intention (BI)	0.862	0.897	0.592	Reliable
Effort Expectancy (EE)	0.734	0.849	0.653	Reliable
Performance Expectancy (PE)	0.846	0.890	0.620	Reliable
Social Influence (SI)	0.872	0.903	0.609	Reliable
Trust (T)	0.901	0.924	0.671	Reliable

Inner Model Analysis

Inner model analysis is the structural model coefficients for relationships between constructs are derived from the estimation of a series of regression equations (Hair et al., 2019). Inner model consists of Path Coefficient and Determinant of Coefficient Result (R^2).

Path Coefficient

Path coefficient is a number in the "T-statistics" column to see whether the inner model path coefficient is significant or not. Using a two-way t-test with a significance level of 5%, the path coefficient will be significant if the T-statistic is >1.96 (Wong, 2013). Based on table 4 it can be seen that the most constructions related with HI, H3, H4, H5 and H6 has a positive significant influence between X variable to Y variable, X variable to Z variable and Y variable to Z variable. Although there are two hypotheses whose results are negative and not significant.

Table 4. Path Coefficient

No	Effect	T-Value	T-Statistics	P-Value	Result
1	EE -> T	1.96	3.724	0	Significant
2	PE -> T	1.96	1.053	0.292	Non-Significant
3	SI -> T	1.96	10.125	0	Significant
4	T -> BI	1.96	5.648	0	Significant
5	EE -> BI	1.96	3.465	0.001	Significant
6	SI -> BI	1.96	4.691	0	Significant
7	PE -> BI	1.96	1.01	0.312	Non-Significant

Determinant of Coefficient Result (R^2)

Structural model coefficients for relationships between constructions are derived from estimating a series of regression equations. R2 values of 0.75, 0.50 and 0.25 are considered substantial, moderate, and weak (Hair et al., 2019). The X variables such as Performance Expectancy, Effort Expectancy, and Social Influence have scored 63.7% towards Y variable (Trust) and considered a moderate impact. For the rest, 38,3% of what affects trust is caused by variables not explained and discussed by the research in this study. The Y variable (Trust) has an impact on the Z variable (Behavioural Intention to Use) with the score result of 66.3% and it is considered as moderate impact, while 33,7% of what influences behavioural intention is caused by variables not explained and discussed by the research in this study.

Table 5. The Determinant of Coefficient Result (R^2)

	R Square Adjusted	Result
BI	0.637	Moderate
T	0.663	Moderate

Discussion

Out of the seven hypotheses proposed in this study, two hypotheses were stated to positive non-significant influence and the other 4 hypotheses were stated to be positive significant influence. To begin with, Effort Expectancy to Trust found the result positive significant influence, that the T-statistic show a value of 3.724 (t>1.96) and also has a P-value of 0.000 (p <0.05). However, regarding the results of Performance Expectancy to Trust, it can be seen that the results have a positive non-significant influence. The researchers found that the T-statistic showed a value of 1.053 (t<1.96) and also had a P-value of 0.292 (p>0.05). While the results found by the researchers between the relationship between Social Influence to Trust is a positive significant influence. The researchers found that the T-statistic showed a value of

10.125 (t>1.96) and also had a P-value of 0.000 (p<0.05). These results are in line with research conducted by Widyanto & Kusumawardani (2020) which states that Social Influence has a significant effect on Trust, this finding shows that Social Influence plays a major role in shaping people's expectations of the level of Trust.

It can also be seen that there is a positive significant influence of Trust and Behavioural Intention to Use. The researchers found that the T-statistic showed a value of 5.648 (t>1.96) and also had a P-value of 0.000 (p>0.05). These results are in line with research conducted by Mubarok et al. (2018) which states that there is a partially significant influence on the consumer trust variable on behavioural intention. For the relationship between Effort Expectancy to Behavioural Intention to Use e-commerce during the COVID-19 pandemic, there is a positive significant influence. Based on the data analysis that has been done, the researchers show a T-statistic value of 3,465 (t>1.96) and also has a P-value of 0.001 (p>0.05).

The results found by researchers of the Social Influences to Behavioural Intention to Use e-commerce during the COVID-19 pandemic resulted in a positive significant influence. Based on the data analysis that has been done, the researchers show the T-statistic value of 4.691 (t>1.96) and also has a P-value of 0.000 (p>0.05). However, there is a positive non-significant influence of performance expectations on behavioral intentions to use e-commerce. Based on the data analysis that has been done, the research shows the T-statistic value of 1.010 (t<1.96) and also has a P-value of 0.312 (p<0.05).

CONCLUSION

In this study, the researchers find several important findings that can contribute to the ongoing discussion on technology adoption, particularly on the use or adaptation of e-commerce. Based on the discussion of the hypotheses that have been proposed in this study, there are two hypotheses that have no significant effect, namely the effect of performance expectancy on trust and the influence of the relationship between performance expectancy on behavioral intention to use. It can be concluded that the influence of Performance Expectancy on Trust is very important and really needs to be considered in its influence on behavioral intention to use. Therefore, researchers suggest that companies in the field of e-commerce can improve and make e-commerce application services as simple as possible in order to be able to streamline users' time and be able to maximize as much as possible to meet what is expected by customers. In addition, the company's reputation must be maximized so that trust in a company is maintained and avoids company bankruptcy. There are many factors that can influence the performance expectations of beliefs on behavioral intentions to use which have not been fully described in this study due to their limitations. Furthermore, the researchers suggest that further researchers can add gender, age, experience and voluntariness use because they can build communities in using and adapting to e-commerce.

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