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E-wallet Adoption: Technology Acceptance Model and COVID-19

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Abstract

The development of information technology has almost entered all economic and daily activities, such as in the financial aspect (financial technology). Since the pandemic, many e-wallets have been used as digital payment tools in Batam city, especially ShopeePay. Therefore, this study aims to analyze the level of adoption of ShopeePay by utilizing the TAM component and perceived risk, which refers to disease risk known as perceived COVID-19 risk. Purposive sampling is used as a sampling technique, with 179 samples obtained through google Forms filed by respondents. The results of this study found that there is a significant influence between perceived usefulness and ease of use on behavioral intention. Meanwhile, perceived COVID-19 risk does not significantly affect behavioral intention.

Keywords: Behavioral intention; perceived ease of use; perceived usefulness; technology acceptance model; COVID-19

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Introduction

The development of information technology has brought significant changes to people's lifestyles which tend to be dominated by the demands of a fast-paced life (Winata & Permana, 2020). The pace of this development has almost entered all economic and daily activities, such as in the health, education, and financial aspect. Financial services in Indonesia have evolved in line with innovation and technology. They have experienced boom and bust cycles resulting from the financial crisis, including the 1997–1998 Asian financial crisis and the 2008 global financial crisis (Batunanggar, 2019). According to Setiawan et al. (2021), financial technology (fintech) is an innovation that helps people to make financial transactions easily and quickly. Fintech describes a broader range of users offering financial services and is rapidly gaining a worldwide user base. So we can say that fintech refers to the use of technology that provides solutions to financial problems. However, fintech can also influence the provision of financial services and the development of the financial industry (Daragmeh et al., 2021).

An E-wallet is an electronic payment tool through a mobile device to transfer funds (Undale et al., 2021). E-wallets have changed the way customers and merchants transact. Direct contact and cash are no longer necessary for transactions. Therefore, the transaction flow becomes more straightforward, easier, and faster. Moreover, the trend of payments using e-wallets has increased the variety of digital wallets and made the market more competitive in Indonesia since the pandemic (Amanda, 2021). In Batam City, payments using e-wallets, especially the ShopeePay brand, at merchants have always been seen for the last two years.

Furthermore, every price always offers cashback which is quite tempting and profitable, especially for students who have not earned income. Thus, it is believed that these offers will increase their perception and encourage their behavioral intention (BI) in adopting ShopeePay. As explained in the research study of Amir et al. (2019), BI or user intentions will be strongly influenced by perceived usefulness (PU) and ease of use (PEU) which are components of the Technology Acceptance Model (TAM). These two factors are critical to identifying the level of acceptance of ShopeePay by each individual.

Currently, many studies have extended the theory of TAM to examine other factors, such as in the research of Shaw and Kesharwani (2019), Aji et al. (2020), and Daragmeh et al. (2021). Suppose most previous research will add an element of risk related to personal, security, or financial data, as in the study of Giovanis et al. (2019) and Yan et al. (2021), then in this study. In that case, TAM will be expanded by adding a risk based on the COVID-19 pandemic (perceived COVID-19 risk or PCR) to determine whether the adoption intention of the citizens of Batam City can be influenced by the risks associated with the

transmission of the virus. Thus, PCR is a person's level of concern that will be infected with the virus through cash exchange (Aji et al., 2020). As we know, COVID-19 has not only impacted to country's economy but has also had its worst effect, which can be felt by the community (Fernandes, 2020). In addition, there is also an appeal from WHO (World Health Organization) and the government who advised the public to use e-wallets to reduce physical contact and break the chain of the spread of COVID-19 (Dong, 2020). Therefore, this appeal certainly has the opportunity to increase the use of digital payments.

Due to the lack of research on this topic, this study aims to contribute to the literature about the effect of perceived usefulness, ease of use, and COVID-19 risk on users' behavioral intentions to adopt e-wallets, especially during the pandemic. This research is also expected to provide valuable insights related to the impact of the COVID-19 on the use of e-wallets, even though the sample obtained is only from the citizens of Batam City.

Method

A quantitative approach is used to target the citizens of Batam City as the population of this study. The type of data to be collected is primary data obtained through the distribution of online questionnaires to respondents. Respondents are welcome to answer all questions using a Likert scale. Five answer scales are available, namely strongly agree, agree, neutral, disagree, and strongly disagree.

The sample criteria in this study must be respondents who have or are currently using e-wallet services (ShopeePay). Thus, the sampling method used in this study is purposive sampling, which is a method of determining data that refers to the researcher's criteria (Cooper & Schindler, 2014). In this study, 193 respondents contributed, with 14 respondents not meeting the requirements, so the total sample that could be used for data processing is 179 samples.

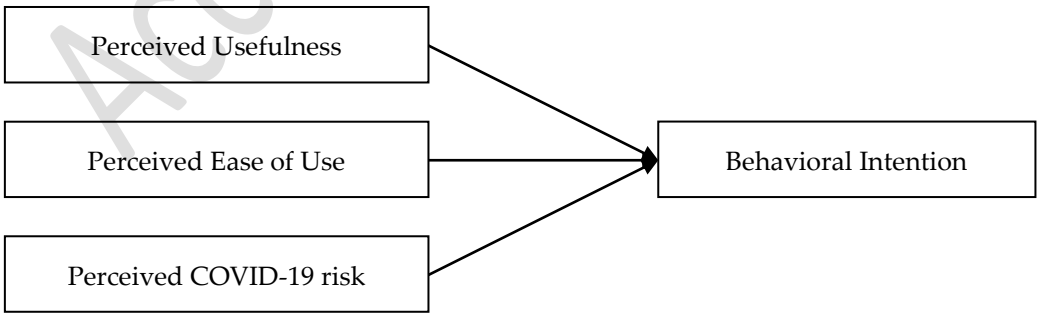

Figure 1. Research's Framework

Table 1. Definition and Indicators of Variable

Variables	Sources
BI is the degree to which a person has developed a conscious plan to do perform or not perform some predetermined future behavior, especially in technology (Budu et al., 2018).	4 indicators Source: Shaw and Kesharwani (2019)
PU is defined as a person's degree of confidence or belief that his performance will improve only by using certain technologies (Muslichah, 2018).	4 indicators Source: Shaw and Kesharwani (2019)
PEU is defined as a person's degree of confidence that using a certain technology would be free of effort. The easier the use of technology is, the more useful it could be, increasing its adoption and usage (Rehman & Shaikh, 2020).	4 indicators Source: Shaw and Kesharwani (2019)
PCR is a type of risk variable which a person is not sure about the condition of the COVID-19 pandemic. PCR is the level of concern that will be infected by the virus through the exchange of cash (Aji et al., 2020).	4 indicators Source: Aji et al. (2020)

Referring to the model framework and the description of the effects above, the following hypothesis is formulated, namely:

H1: Perceived usefulness has a significant influence on behavioral intention.

H2: Perceived ease of use has a significant influence on behavioral intention.

H3: Perceived COVID-19 risk has a significant influence on behavioral intention.

(5)

Empirical Result

The structural Equation Modeling (SEM) approach is a measurement model used to ensure whether the data is valid and reliable. According to Hair et al. (2017), evaluation of the measurement model can be done by reviewing the correlation score or the value of each question. A validity and reliability test are measured by outer loading, Average Variance Extracted (AVE), cross-loading, Cronbach's alpha, and composite reliability.

The AVE and outer loading measure convergent validity, whereas discriminant validity is measured by cross-loading. The requirement of outer loading is more than 0.6, AVE is more than 0.5, and cross-loading is more than 0.7. Based on Tables 2 and 3, all items have already met convergent and

discriminant validity requirements because have values above the standard requirements for each parameter.

Table 2. Outer Loading and AVE (Average Variance Expected)

Variable	Code	Loading	AVE
Perceived Usefulness (PU)	PU1	0.868	0.682
	PU2	0.853	
	PU3	0.783	
	PU4	0.797	
Perceived Ease of Use (PEU)	PEU1	0.785	0.688
	PEU2	0.874	
	PEU3	0.872	
	PEU4	0.782	
Perceived COVID-19 Risk (PCR)	PCR1	0.892	0.806
	PCR2	0.870	
	PCR3	0.936	
	PCR4	0.892	
Behavioral Intention (BI)	BI1	0.892	0.794
	BI2	0.871	
	BI3	0.911	
	BI4	0.888	

Table 3. Cross Loading

	BI	PCR	PEU	PU
BI1	**0.892**	0.186	0.505	0.531
BI2	**0.871**	0.108	0.410	0.431
BI3	**0.911**	0.184	0.508	0.491
BI4	**0.888**	0.207	0.508	0.474
PCR1	0.168	**0.892**	0.116	0.146
PCR2	0.196	**0.870**	0.158	0.188
PCR3	0.168	**0.936**	0.077	0.096
PCR4	0.166	**0.892**	0.117	0.081
PEU1	0.466	0.121	**0.785**	0.645
PEU2	0.487	0.102	**0.874**	0.491
PEU3	0.426	0.072	**0.872**	0.513
PEU4	0.423	0.145	**0.782**	0.537
PU1	0.463	0.085	0.575	**0.868**
PU2	0.475	0.126	0.598	**0.853**
PU3	0.355	0.094	0.499	**0.783**
PU4	0.482	0.168	0.502	**0.797**

Source: Processed data (2022)

Cronbach's alpha and composite reliability are used to measure reliability tests. This reliability test is also essential for estimating the reliability

of the measurement of the item or question used (Hair et al., 2017). A variable is reliable if its Cronbach's alpha and composite reliability value are more than 0.6. The results are shown in Table 4.

Table 4. Cronbach's Alpha and Composite Reliability

Variable	Cronbach's Alpha	Composite Reliability	Description
Behavioral Intention	0.913	0.939	Reliable
Perceived COVID-19 Risk	0.920	0.943	Reliable
Perceived Ease of Use	0.848	0.898	Reliable
Perceived Usefulness	0.845	0.896	Reliable
R-squared	0.368		

R-Square test is to determine how capable the proposed model could explain its effect. The higher the value shown, the better the independent explains the dependent variable. Table 5 shows that behavioral intention has R-Square of 0.368, which indicates that this model can explain users' behavioral intention by 36.8%. The remaining percentages are explained by variables not examined in this study.Path Coefficient is significant if P-Value < 0.005, based on table 11 PU and PEU are significant with P-Value of each is 0.001 and 0.002. For PCR, it is not significant because it has a P-value > 0.005, which is 0.087. Test results are shown in Table 5.

Table 5. Path Coefficient

Variable	Coefficient	P-Value	Description
Perceived Usefulness-> Behavioral Intention	0.309	0.001	Significant
Perceived Ease of Use-> Behavioral Intention	0.330	0.002	Significant
Perceived COVID-19 Risk-> Behavioral Intention	0.114	0.087	Not significant

The results indicate a significant positive effect between the two variables, so H1 is accepted. This finding is in line with Aji et al. (2020), Shaw and Kesharwani (2019), Amir et al. (2019), and Daragmeh et al. (2021), which confirms that consumers will be more willing to consider and adopt an e-wallet that offers added value, such as efficiency and time savings. Perceived ease of use has a significant influence on behavioral intention. The results indicate a significant positive effect between the two variables, so H2 is accepted. This finding is similar to Shaw and Kesharwani (2019) and To and Trinh (2021), which say that a person will use an e-wallet more often if it is easy and does not require much effort to use. Perceived COVID-19 risk has a significant influence on behavioral intention.

The results indicate a positive but insignificant effect between the two variables, so H3 is rejected. The Batam City community's intention to use e-wallets is not significantly affected by the COVID-19 pandemic. Referring to the news by Santoso (2022), the citizens of Batam City are one of the areas whose PPKM needs to be tightened. It can also give rise to the perspective that the community is still quite ignorant in self-discipline related to reducing the transmission of the virus. They use e-wallet solely because of the convenience and added value it offers. So, this result is contrary to Aji et al. (2020) and Daragmeh et al. (2021), who find that the pandemic will increase user interest or behavior toward transacting e-wallets.

Conclusions

In this study, PU and PEU both have a significant influence on BI on the use of ShopeePay in Batam City. It means that the citizens of Batam City experience there are good uses or benefits while using ShopeePay and accompanied by ease of use. However, PCR had an insignificant positive effect. It indicates that the adoption of ShopeePay in Batam City does not affect Batam City's citizens, or they are not affected by the risk of COVID-19. There is a possibility that Batam City's citizens still have the habit of using cash as payment, which still cannot be transferred entirely to digital payments regardless of the danger or emergency conditions due to the COVID-19 pandemic.

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