

# **Continuation Use of Digital Wallet Using Extended ECM Model in Indonesia**

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## **Abstract**

Previous research has been using Expectation Confirmation Model (ECM) model, but the model does not cater many related aspects about continuation to use, therefore this research aims to study the continuance intention of digital wallet by using Extended ECM Model. In this paper, satisfaction, confirmation, and perceived usefulness, with additional of promotion, mobility, and cost saving are used as the independent variable to measure the dependent variable of intention to continue use digital wallet. The data were collected from 236 respondents between age 18 to 55 years old who live in Jabodetabek area that use the top five digital wallet in Indonesia (Ovo, GoPay, Shoppe Pay, Dana, Link Aja). The data were evaluated by utilizing structural equation modelling approach. The outcome show that perceived usefulness does not significantly affect continuance intention of using digital wallet. However, satisfaction, promotion, mobility, and cost saving significantly affect the continuation use of digital wallet. Also, perceived usefulness and confirmation significantly affect the satisfaction of using digital wallet. Furthermore, satisfaction significantly mediates positive relationship between perceived usefulness with continuance intention and confirmation with continuance intention. This study provides practical implications for digital wallet provider that satisfaction is the factor that influence the continuance intention, not perceived usefulness.

## **Keywords**

Digital wallet, ECM model, Continuation use, Mobility, Cost saving

## **1. Introduction**

Trends nowadays, technology, and innovation have shaped customer expectations. Customers are making choices based on anything that are exposed to them. This also includes on how customer do transactions and paying utilities. Digital wallet company are following any changes happened to customer expectations and have been trying to match them. They collect customer data, update the information, and change the way on how they can provide to match customer expectations.

According to Ariffin, et al (2021), digital wallet is a cashless system by using smartphone that enable user to transfer or make payment conveniently. The system utilizes and apply QR code or peer-to-peer (P2P) approach to do the transaction. By using QR code or payment system inside the application, customers have the ability to transfer funds between themselves. Banks and non-banks institutions have been trying to compete to give better performance and more convenience to the customers.

As of January 2021, Indonesia had a population of 274.9 million people (Kemp, 2021). In 2020, more than half (67%) Indonesian people have been using a smartphone; and this Indonesia smartphone user is expected to grow to reach 239 million by 2026 (Nurhayati-Wolff, 2021). The market potential of digital wallet transaction is forecasted to expand

to US\$ 6.4 billion by 2020, and it is projected to reach US\$ 9.4 billion in 2025 (Statista, 2021). Indonesia is very ready to be disrupted by digital financial services. As of January 2021, Bank Indonesia had approved the licenses of more than 60 e-wallet operators. Recent survey conducted by PT. Kadence International in 2021, showed that 44% of respondents used e-wallet to make online digital payments. Among many digital wallet providers, Ovo become the number one e-wallet providers used by Indonesia, with 31% of market share; followed closely by GoPay with 25% market share. Then, in the third position is ShopeePay with 20% of market share, followed by Dana and Link Aja with 19% and 4% of market share respectively. The respondents said that they use e-wallet due to several reasons, such as, can be used on many applications or online merchants, can make balance transfers to bank accounts, have lots of promos and cashback, easy to use, convenience in transactions, low top up fees, and used by many physical stores and merchants.

It is important to analyze the relationship of user acceptance and continuous intention to use in emerging technology, as inefficiency and abnormality may cause business fiasco (Bhattacharjee, 2001). According to Ding and Chai (2015), a past survey in mobile application usage has indicated that there are many terminations after several months of installing the application. After three months of usage, the number of users dropped to only 24%. Moreover, after six months, the number of users become only 14% and it dropped further to only 4% after one year of installation.

Another occasion stated by Abdul Halim et al. (2021) also showed that user continuation must be maintained. In his paper, he stated that people in Malaysia installed e-wallet application due to stimulus given by the government. Later on, when the government stopped giving the incentive or the incentive amount has been used, they also stopped the usage of e-wallet application. Khare, et al (2019) stated that coupons, as a form of promotion, have impact on customer acquisition, retention, and re-patronage behaviour. Considering previous study, there might be a chance that digital wallet user will terminate its usage if there is no promotion given. This is supported by research from Hoang and Le (2020) and Acelian (2021) that stated promotion might affect consumer decision to use digital wallet. Moreover, Bagla and Sancheti (2018) and Zhou (2011) also stated that cost and mobility might also become an important factor in adoption of digital wallets.

Most of the previous studies (Nawayseh, 2020; Tripopsakul 2021) paid attention to digital wallet adoption, however there is still limited research on the continuous intention of digital wallet. For company especially in financial sector, analyzing what factors impacting the continuous intention to use of digital wallet can help the company make the most appropriate strategy. Thus, this research is trying to answer on what factors impacting continuation use of digital wallet, especially in Jabodetabek area.

The existing Expectation Confirmation Model (ECM) used variable of satisfaction, confirmation, and perceived usefulness to measure continuous intention. In order to make the study more comprehensive, this study extend the ECM model by adding promotion, mobility, and cost saving as independent variable that might affect user decision to continue using digital wallet. Thus, it is called extended ECM model. The result of this study give contribution to digital wallet providers on how to improve the system and services so that the user can keep using the digital wallet.

## **2. Literature Review**

### **Expectation Confirmation Model**

According to Bhattacharjee (2001), the expectation confirmation model (ECM) was suggested to narrate people's behaviour in "continue to use" an information system. ECM was derived from the consumer satisfaction / dissatisfaction model (CS/D), which originated from research in marketing to explain consumer's action when they repurchase something as previously mentioned in early study by Oliver (1980). Ambalov (2018) stated that much of technology study in which ECM is applied has successfully explain the continuance intention of using information technology. Another study by (Veeramootoo et al., 2018) confirms that ECM model is better if compare with other technology adoption models. This is because it includes satisfaction and confirmation as variable. These two factors are considered key factors to analyze post-adoption reactions (Bhattacharjee, 2001).

Lu et al. (2016) said that ECM model is considered fit for analyzing continuance with mobile commerce or the technology-based business innovation. Liao (2009), Bhattacharjee (2001), Lu et al. (2016) stated that ECM model measures the continuation intention by using satisfaction and perceived usefulness as mediating variable. Both satisfaction and perceived usefulness are determined by the confirmation of expectation from user.

Satisfaction

According to Khayer and Bao (2019), building and retaining loyalty depends a lot on consumer satisfaction. In information system, a user's intention towards continuous use is more likely if the user is satisfied with the product (Veeramootoo et al., 2018). Past study conducted by Halim et al. (2021) showed that user satisfaction influenced continuous intention of using e-wallet applications in Malaysia. In continuance usage intention of digital wallet, our research assumes that satisfaction will play an important role in determining the continuance use of digital wallet. Moreover, the satisfactory experience will give positive impact to the continuance use of digital wallet. In this research, we also view satisfaction as a mediator of perceived usefulness and confirmation as described in ECM in the context of technology.

#### Confirmation

Confirmation is used to describe the cognitive understanding that the real experience of using services, based on technology, reflects the expectation use of that technology (Khayer and Bao, 2019). Bhattacharjee (2001) mentioned when there is a gap between expectation and experience, user will feel discomfort due to a contradictory of perception. As a result, users will adjust their perception to minimize the lack of agreement. Continuous usage behavior has supported the significant relationship between confirmation and user satisfaction (Veeramootoo et al., 2018; Nascimento et al., 2018). If the real experience of using digital wallet meets the expectations, it will positively influence the level of satisfaction.

Moreover, perceived usefulness is also believed to be influenced by confirmation. According to Bhattacharjee (2001), the user might look at their past confirmation experience to form their perceived usefulness. Especially, if they feel uncertain regarding what would they receive from the system. Moreover, the extent of confirmation and disconfirmation might increase and decrease the level of perceived usefulness respectively. Previous study by Khayer and Bao (2019) shows that confirmation positively affects the perceived usefulness of Alipay users in China. In our research, we view that confirmation will give effect to satisfaction of the user and also play an important role in user perceived usefulness.

#### Perceived usefulness

Perceived usefulness describes users' confidence that the use of a specific method can be useful for enhancing their work achievement (Davis, 1989). By utilizing information systems, users can get advantages in many forms such as having more precision, productivity, and can complete their task faster (Yang et al., 2009). There is a direct relationship between perceived usefulness and user satisfaction; and perceived usefulness and continuance usage intention (Bhattacharjee, 2001; Weng et al., 2017). As an example, Liao et al. (2009) found that perceived usefulness and user satisfaction have a positive and significant relationship. Furthermore, the study also found that perceived usefulness positively impacts continuance usage intention. According to Weng et al. (2017) perceived usefulness positively impacts the continuance intention to use the MTB (mobile taxi booking) Apps. They argue that if the user finds that the application to be useful, the user will intend to use the application continuously. However, according to more recent study by Abdul Halim et al. (2021), perceived usefulness has no significant impact to continuous usage of e-wallet in Malaysia. In our research, we will see the effect of perceived usefulness to satisfaction, as well as its impact to continuance intention.

#### Continuance Intention

According to Hoang and Le (2020), behavioral intention is described to what extent a user will perform a specific behavior. In technology adoption theories, the correlation between behavioral intention and usage behavior has been consistently established. Because of that, if the user has intention to use the technology, it is perceived that the technology might be successful. This is because the intention is perceived as the basic indicator of success. For this reason, our research uses continuance intention as the dependent variable.

#### Promotion

According to Hoang and Le (2020), promotion is one of many ways of marketing strategy that is used by the company to attain sales and marketing goals in a relatively short term. The company might use discount, cashback, rewards, or gift as the tools of promotion. Yusuf (2010) stated that promotion could affect consumer's mind and then create changes in behaviour. According to Acelian (2021), sales promotion has several objectives, such as increase new users, increase repeat purchase, maintain customer from changing to other product, provide customer appreciation, increase brand loyalty, and increase short term and long-term sales. Previous study by Khare et al. (2019) stated that promotional offers do not significantly impact the intention to continue using travel website. However, study by Hoang and Le (2020) which looked on the role of promotion in mobile wallet adoption showed that promotion has the

strongest impact on intention to use mobile wallet. They argue that many people used mobile wallet for the first time because of the promotion offer. So, in this research of continuance intention of digital wallet, we proposed that promotional might positively affect the continuation use of digital wallet.

#### Mobility

According to Bagla and Sancheti (2018) and Zmijewska et al (2004), mobility is a distinctive feature of digital payment wallet. Mobility allows users to make payment regardless of their location and time. The benefit of digital payment mobility makes users free from temporal and spatial constraints, and enable them to conduct payment anytime, from anywhere. If by using digital wallet, customer can do transaction anytime and anywhere, this might impact customer decision to keep continue using digital wallet. Previous study by Liu et al. (2019), stated that mobility is the most significant characteristics of mobile payments. It helps the user regardless of their space and help them do transaction anywhere and anytime. Hence, our study will add mobility as a variable of continuance intention.

#### Cost Saving

Another factor that might affect customer decision in using digital wallet is cost related factor. According to Bagla and Sancheti (2018), the cost of using digital wallet must be keep minimal, or people will go back to use cash as a form of payment. According to To, et al (2007), cost saving refers to decrease on the spending for a product or service. Cost saving is a significant element in consumer purchasing behavior (Tsao, 2013). Moreover, Ahmad and Khalid (2017) stated that some users are unwilling to adopt new technologies if they must pay additional cost. If customer could get a lower price by using digital wallet, the cost saving might be one of the factors that affect continuation intention of using digital wallet. When customer realize that they can purchase products of the same quality at a lower cost by using digital wallet, their intention to use digital wallet might develop easily. Hence, we proposed to include cost saving as the variable in determining continuance intention to use digital wallet (Table 1).

#### Hypothesis

Hypothesis is structured by following ECM model and extended by adding some variables. In this research, the hypothesis to be tested are as follow :

H1 : Satisfaction positively affects the continuation use of digital wallet

H2 : Confirmation positively affects the satisfaction of using digital wallet

H3 : Confirmation positively affects the perceived usefulness of digital wallet

H4 : Perceived usefulness positively affects the satisfaction of using digital wallet

H5 : Perceived usefulness positively affect the continuation use of digital wallet

H6 : Satisfaction mediates the positive relationship between perceived usefulness and continuation use of digital wallet

H7 : Satisfaction mediates the positive relationship between confirmation and continuation use of digital wallet

H8 : Promotion positively affects the continuation use of digital wallet

H9 : Mobility positively affects the continuation use of digital wallet

H10 : Cost saving positively affects the continuation use of digital wallet

The model can be seen in Figure 1.

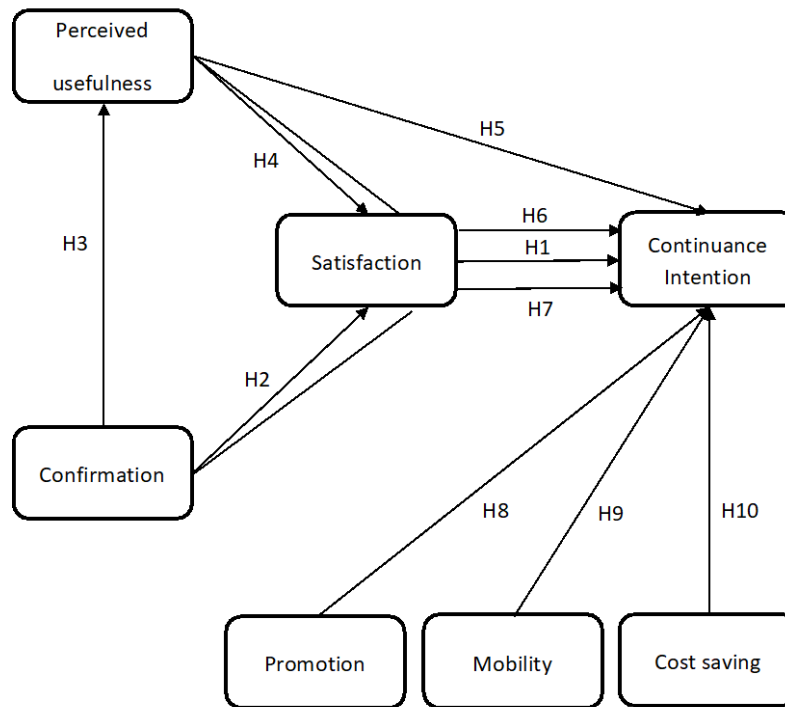


Figure 1. Framework model

Table 1. Operationalization of Research Model

Code	Indicator	Scale
Confirmation (CON) – Khayer and Bao (2019) Confirmation is used to describe the cognitive understanding that the real experience of using services, based on technology, reflects the expectation use of that technology.		
CON1	My experience with using digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) was better than what I expected	Likert 1-5
CON2	The service level provided by digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) was better than my expectation	Likert 1-5
CON3	Digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) can meet demands in excess of what I required for the services	Likert 1-5
Perceived Usefulness (PU) – Khayer and Bao (2019) Perceived usefulness describes users' confidence that the use of a specific method can be useful for enhancing their work achievement		
PU1	The use of digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) improves my productivity in payment functions	Likert 1-5
PU2	The use of digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) enhances my effectiveness in performing financial transactions	Likert 1-5
PU 3	I find digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) to be useful in my daily activities	Likert 1-5
Satisfaction (SAT) – Khayer and Bao (2019)		

Satisfaction is defined as psychological or affective state related to and resulting from a cognitive evaluation of the discrepancy between expectancy and performance.		
SAT1	Digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) has met my expectations in making my financial transactions	Likert 1-5
SAT2	I am pleased with the experience of using digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja)	Likert 1-5
SAT3	Digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) is efficient in fulfilling my financial transactions	Likert 1-5
Continuance Intention (CIN) – Daragmeh, et al (2021) Continuance intention is defined as an individual’s intention to use or reuse a particular system continuously.		
CIN1	I intend to continue using digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja)	Likert 1-5
CIN2	My intention is to continue using digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) rather than discontinue its use	Likert 1-5
CIN3	If I could, I would like to continue my use of digital wallet as much as possible	Likert 1-5
Promotional (PRO) – Hoang and Le (2020) Promotion is one of many ways of marketing strategy that is used by the company to attain sales and marketing goals in a relatively short term.		
PRO1	I am attracted to digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) because they give good discounts	Likert 1-5
PRO2	I like digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) that provide price rebates on my purchases	Likert 1-5
PRO3	I prefer digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) that have promotional offers on usage	Likert 1-5
Mobility (MOB) – Liu et al (2019) Mobility refers to user’s ability to make payment regardless of their location and time.		
MOB1	I believe digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) are independent of time	Likert 1-5
MOB2	I believe digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) are independent of place	Likert 1-5
MOB3	I can use digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) anytime, anyplace	Likert 1-5
Cost saving (COS) – To, et al (2007), Tsao (2013) Cost saving refers to decrease on the spending for a product or service.		
COS1	Digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) save my money	Likert 1-5
COS2	Digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) cause me to spend less	Likert 1-5
COS3	Digital wallet (Ovo/Gopay/ShopeePay/Dana/LinkAja) offers me a competitive price	Likert 1-5

### 3. Methods

To prove the research hypothesis, a questionnaire through website was developed. There are two parts that need to be filled by the respondents. The first part asked about respondents’ demographic data. The other part asked 21 question that used to quantify the model constructs. The measurement was rated using a five-point Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree”. The data were examined by using Smart PLS software. In the study, structural equation modelling (SEM) was applied. This is because of SEM ability to measure the reliability and validity of multi-item construct measures, and also to test structural model relationship (Hair, et al., 2017).

#### 4. Data Collection

The survey was given out to digital wallet user in Jabodetabek area. This research was conducted by using convenience sampling method. The sampling frame was digital wallet user between age 18 to 55 who lived in Jabodetabek area and have been using at least one of top five digital wallet in Indonesia (Ovo/Gopay/ShopeePay/Dana/LinkAja). Electronic platforms such as Email, Instagram, and Whatsapp was used to gather the data from the respondents. This research got 238 respondents.

#### 5. Results and Discussion

Descriptive statistics

The respondent profile can be seen from Table 2. There are 238 total eligible respondents, consisted of 103 (43%) male respondents and 135 (57%) female respondents. Only two respondents are below 18 years old represented 0.8% and there are 17 (7.2%) respondents with the age between 18-25 years old. Most of the respondents are between 26-40 years old represented by 165 (69.3%) respondents. There are 51 (21.4%) respondents and 3 (1.3%) respondents with the age of 41-55 years old and more than 55 years old, respectively. In terms of education achievement, there are 0.4% junior high school graduate, 5.1% senior high school graduate, 9.7% diploma holder, 73.9% with bachelor degree, and 10.9% with master/doctoral degree. In terms of occupation, the respondents consisted of 1.7% student, 2.9% housewife, 87.4% employee, 5.5% entrepreneur, and 2.5% other occupation.

Most of the respondents (80.2%) have been using digital wallet for more than 2 years. Only 1.7% respondent have only been using digital wallet for less than six months. There are 2.1% and 16% of respondents that have been using digital wallet for 6-12 months and 1-2 years, respectively. Based on frequency of using digital wallet, there are only 1.7% respondent that use digital wallet less than 1 times per months. Some of respondent (11.8%) use digital wallet 5-9 times per month. Other respondent (25.2%) uses digital wallet 9-16 times per month. Then the majority (42.4%) use digital wallet more than 16 times per month. Based on the response from the respondents, the most frequently used digital wallet by the respondents are GoPay (43.3%), ShopeePay (27.3%), and OVO (23.5%). Only 3.8% and 0.4% of the respondent frequently use DANA and LinkAja, respectively. The last 1.7% of the respondent use other brand of digital wallet. From the descriptive statistic, it can be concluded that the respondents are familiar with digital wallet.

Table 2. Respondent demographic profile

	Frequency	Percentage
<b>Gender</b>		
Male	103	43%
Female	135	57%
<b>Age</b>		
< 18 years	2	0.8%
18 – 25 years	17	7.2%
26 – 40 years	165	69.3%
41 – 55 years	51	21.4%
> 55 years	3	1.3%
<b>Education</b>		
Junior High School	1	0.4%
Senior High School	12	5.1%
Diploma	23	9.7%
Undergraduate	176	73.9%
Postgraduate	26	10.9%
<b>Occupation</b>		
Student	4	1.7%

Housewife	7	2.9%
Employee	208	87.4%
Entrepreneur	13	5.5%
Other	6	2.5%
<b>Duration of Using Digital Wallet</b>		
1-6 months	4	1.7%
6-12 months	5	2.1%
1-2 years	38	16.0%
> 2 years	191	80.2%
<b>Frequency of Using Digital Wallet</b>		
< 1 time / month	4	1.7%
1-4 times / month	28	11.8%
5-8 times / month	45	18.9%
9-16 times / month	60	25.2%
> 16 times / month	101	42.4%
<b>Brand of Digital Wallet used most frequently</b>		
DANA	9	3.8%
GoPay	103	43.3%
LinkAja	1	0.4%
OVO	56	23.5%
ShopeePay	65	27.3%
Other	4	1.7%
Number of respondents = 238		

#### Evaluation of the measurement model

The measurement model was assessed for internal consistency reliability, convergent validity, and discriminant validity (Hair et al., 2006). The internal consistency reliability was measured by Cronbach's alpha and composite reliability. Indicator reliability was measured by the values of their loadings (Hair, et al. 2006). Hoang and Le (2020) stated that if the coefficient of Cronbach's alpha is higher than 0.70, then the scale would be highly reliable. Based on Table 3, it can be seen that all variables have Cronbach's alpha value of higher than the threshold of 0.70, which means it has satisfied internal consistency. Moreover, the composite reliability in Table 3 also shows higher value than 0.70 for each variable. This is in line with the criteria based on Lu et al. (2016) that stated composite reliability for internal consistency should exceeds 0.70. By measuring the reliability coefficient, the reliability test could assess the consistency of the entire scale (Hoang and Le, 2020).

Table 3. Results for reflective measurement models.

Variables	Items	Convergent Validity		Internal Consistency Reliability	
		Loadings	AVE	Cronbach's alpha	Composite Reliability
		> 0.707	>0.50	> 0.70	> 0.70
Confirmation (CON)	CON1	0.924	0.834	0.901	0.938
	CON2	0.922			
	CON3	0.893			
Perceived Usefulness (PU)	PU1	0.917	0.824	0.893	0.933
	PU2	0.918			
	PU3	0.888			



Satisfaction (SAT)	SAT1	0.932	0.869	0.925	0.952
	SAT2	0.945			
	SAT3	0.920			
Continuance Intention (CIN)	CIN1	0.914	0.817	0.888	0.931
	CIN2	0.934			
	CIN3	0.863			
Promotion (PRO)	PRO1	0.914	0.836	0.902	0.939
	PRO2	0.931			
	PRO3	0.898			
Mobility (MOB)	MOB1	0.867	0.778	0.857	0.913
	MOB2	0.905			
	MOB3	0.874			
Cost Saving (COS)	COS1	0.918	0.831	0.898	0.936
	COS2	0.925			
	COS3	0.891			

Convergent validity was showed if all item loading values can demonstrate value higher than 0.707 and all average variance extracted (AVE) value higher than 0.50 (Hair et al., 2014). Based on Table 3., it can be seen that in this study, the loadings value of all items is higher than 0.707 and all AVE value are higher than 0.50. The value of items loading (>0.70) suggested that more variance was shared between an item and its construct (Hair et al., 2012). Therefore, this study confirmed acceptable convergent validity.

Table 4. Fornell-Larcker Criterion

	CON	CIN	COS	MOB	PU	PRO	SAT
<b>Confirmation</b>	<b>0.913</b>						
<b>Continuous Intention</b>	0.710	<b>0.904</b>					
<b>Cost Saving</b>	0.441	0.555	<b>0.911</b>				
<b>Mobility</b>	0.607	0.719	0.539	<b>0.882</b>			
<b>Perceived Usefulness</b>	0.682	0.712	0.376	0.587	<b>0.908</b>		
<b>Promotion</b>	0.467	0.514	0.550	0.377	0.310	<b>0.914</b>	
<b>Satisfaction</b>	0.783	0.816	0.465	0.689	0.850	0.438	<b>0.932</b>

Furthermore, to check discriminant validity, Fornell-Larcker criterion is commonly used. This criterion compares the AVE (shared variance within) of the constructs to the squared correlation between the constructs (share variance between) (Hair et al., 2017). Table 4. showed the AVE for each of the research constructs are greater than the squared correlation between the construct and other construct. Thus, it showed the measurement model satisfy the requirement for discriminant validity.

Evaluation of the structural model

Table 5. R Square

	R Square	R Square Adjusted
Continuous Intention	0.744	0.738
Perceived Usefulness	0.466	0.463
Satisfaction	0.799	0.798

After confirming the acceptable psychometric properties of the measurement model, structural model was tested. The goodness of the structural model was assessed by  $R^2$  and the level of significance of the path coefficients (Hair et al., 2014). The values of  $R^2$  showed that the model explained 74.4% of variance in continuous intention, 46.6% of the variance in perceived usefulness, and 79.9% of variance in satisfaction. According to Hair, et al. (2014),  $R^2$  value of 0.75, 0.50, 0.25 for endogenous laten variables can, as a rule of thumb, be respectively described as substantial, moderate, or weak.

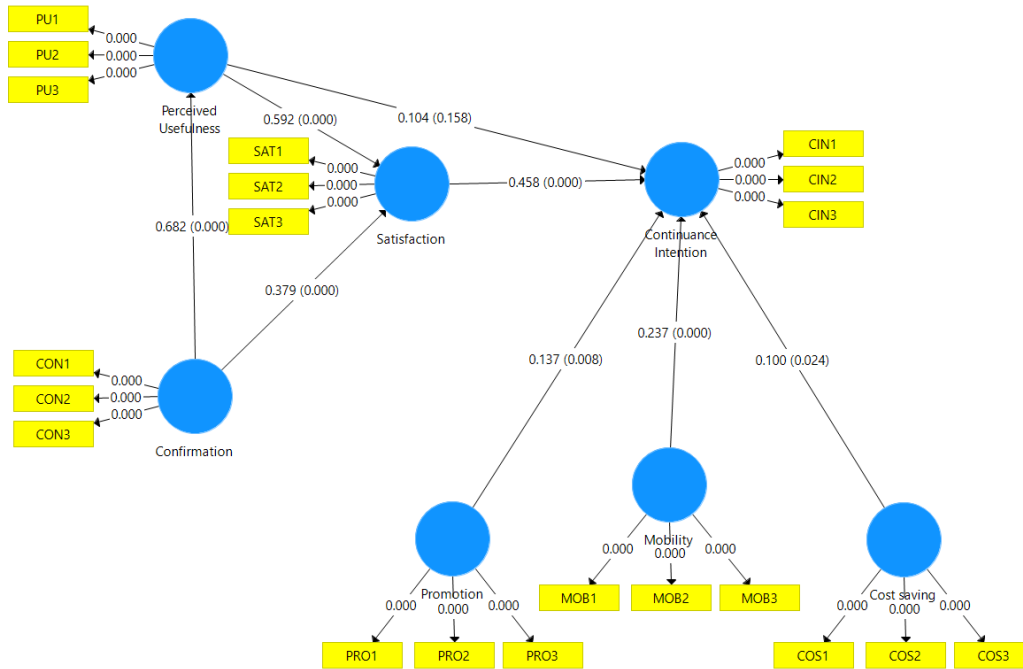


Figure 2. Path Coefficient and p-value

Table 6. Path Analysis

Hypotheses	Path	Path Coefficient	t-statistics	p-values	Decision
H1	SAT → CIN	0.458	5.366	0.000	Supported
H2	CON → SAT	0.379	7.536	0.000	Supported
H3	CON → PU	0.682	14.606	0.000	Supported
H4	PU → SAT	0.592	12.103	0.000	Supported
H5	PU → CIN	0.104	1.464	0.158	Rejected
H6	PU → SAT → CIN	0.271	4.677	0.000	Supported
H7	CON → SAT → CIN	0.173	4.310	0.000	Supported
H8	PRO → CIN	0.137	2.713	0.008	Supported
H9	MOB → CIN	0.237	4.272	0.000	Supported
H10	COS → CIN	0.100	2.324	0.024	Supported

The path significance levels were assessed using the bootstrapping method. The result of path coefficient and p-values are shown in Figure 2. The hypothesis results are shown in Table 6. Based on Table 6., the paths for hypothesis *H1*,

*H2, H3, H4, H6, H7, H8, H9, and H10* were statistically significant, while path for hypothesis *H5* was rejected. These results indicated that confirmation and perceived usefulness positively affects the satisfaction of using digital wallet. Confirmation also positively affects the perceived usefulness of digital wallet. Furthermore, continuance intention of using digital wallet is positively affected by satisfaction, promotion, mobility, and cost saving variable. However, on the other hand, there is no significant effect of perceived usefulness toward continuance to use digital wallet.

Results from this study confirmed 9 out of 10 hypotheses, except *H5*, which are the effect of perceived usefulness towards the intention to continue using digital wallet. The first hypothesis, satisfaction positively affects the continuation use of digital wallet is confirmed in this study. This is in line with the previous study by Abdul Halim et al (2021) and Khayer and Bao (2019). This means that when users are satisfied with the services provided by the digital wallet, they will keep continuing using the digital wallet.

The second hypothesis, confirmation positively affects the satisfaction of using digital wallet, is verified in this study. This is in line with previous study by Veeramootoo et al. (2018). The third hypothesis in our study is also verified, which are confirmation determines the perceived usefulness of digital wallet user. This indicates that based on the real experience of using digital wallet, users determine their perception about the usefulness of the digital wallet. This is in line with previous results by Khayer and Bao (2019). It further can be said that user's confirmation about their initial expectation toward the digital wallet enhanced perceived usefulness, and on the other hand, any disconfirmation will decline perception of usefulness.

Our fourth hypothesis in this research is also supported. Perceived usefulness significantly affects the satisfaction of using digital wallet. This finding is supported by previous result by Liao et. al (2009). The perceived usefulness and confirmation were the antecedents to the satisfaction. The effect of perceived usefulness on satisfaction ( $\beta = 0.592$ ,  $p < 0.05$ ) was higher than the effect of confirmation ( $\beta = 0.379$ ,  $p < 0.05$ ). It suggests that the perceived usefulness of digital wallet plays a more significant role in forming user satisfaction rather than confirmation.

On the other hand, our fifth hypothesis was rejected. Perceived usefulness was found to have no significant effect on the continuation to use digital wallet. This might be because the respondent of this study already knows the function and feature of the digital wallet, which will ease their daily life, so that it does not determine their decision to continue the usage of digital wallet. Thus, our results did not support previous study by Liao et al. (2009) and Weng et al. (2017), but in line with more recent study by Abdul Halim et al. (2021).

Furthermore, in our study, the mediating effect of satisfaction was observed. Based on the results, our sixth and seven hypotheses are confirmed. Satisfaction mediates both the positive relationship between perceived usefulness to continuation use of digital wallet, as well as the relationship between confirmation to continuation use of digital wallet. Based on the result of fifth and sixth hypotheses, this means that if user only see the application as useful, but they are not satisfied with the application, they will not continue using the digital wallet. However, if they are satisfied with the application, they will keep continuing to use the digital wallet.

All extended variables, which are promotion, mobility, and cost saving shows significantly positive results toward continuation use of digital wallet. The eight hypotheses, namely promotion give positive impact toward user intention to continue using digital wallet. This shows different results compared to previous study by Khare et al. (2019), but give complement results toward previous study by Hoang and Le (2020). The result from respondent shows that promotion positively affects the continuation use of digital wallet. Thus, this result gives new perspective that promotion offers not only help in adoption but will also help in retention of digital wallet users.

The other extended variables, namely mobility; and also, our ninth hypothesis, also show positive significant impact toward user intention to continue using digital wallet in the result of our study. This is in line with previous study by Liu et al. (2019). Thus, this study shows that the mobility advantage provided by the digital wallet, helps user to keep using digital wallet.

Furthermore, the last extended variable, namely cost saving, also show positive significant effect toward user intention in continue using digital wallet. This result of the tenth hypothesis complements the previous study by Ahmad and Khalid (2017). Based on the result from our respondent, it shows that the benefit of cost saving will positively impact the user decision to continue using the digital wallet. Hence, it shows that cost saving will help to retain user of digital wallet.

## **6. Conclusion**

This paper determines the factor that impact continuation use of digital wallet, with Extended ECM model, using promotion, mobility, and cost saving. Nine out of ten hypotheses are supported. The remaining one hypothesis about the effect of perceived usefulness to continuation use of digital wallet is rejected. Extended variables, namely promotion, mobility, and cost saving factor positively affects the continuation use of digital wallet. Thus, factors that impact the continuance intention of digital wallet is confirmed in Indonesia.

This study contributes to existing theory by observing the continuance intention after adoption of digital wallet. Furthermore, this study contributes in observing continuance usage of digital wallet, by adding extended variables, namely promotion, mobility, and cost saving, to the ECM model. Very few studies analyze the effect of the extended variables, especially in digital wallet continuance intention to use.

To increase continuance intention, digital wallet provider should not only increase usefulness of the application; but they should make users are satisfied with the experience of using digital wallet. This can be done for example, by creating an efficient UI/UX or by smoothing the API; so that the experience of using digital wallet can be satisfactory. Moreover, digital wallet provider can also use the benefit offered by promotion activity and cost saving, because it shows that both factors help in retention of digital wallet user. Lastly, digital wallet provider can also cooperate with lots of merchant since mobility also affect digital wallet user retention. By having lots of merchants that accept digital payment, users will feel that they can use digital wallet anywhere.

This study has some limitations that should be considered. The cross-sectional method was used in this study, so it only collects the response in one specific time. A longitudinal study is recommended in the future research to explore how our respondent could change their response over time. Furthermore, additional variable such as merchant network and risk factor might be added in the future research.

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## **Biography**

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