

# **Analyzing Factors Affecting Continuance Intention to Use E-wallet During Covid-19 Pandemic in Indonesia**

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## **Abstract**

The occurrence of the Covid-19 pandemic has caused changes in public payment methods, with the aim of reducing the transmission of the Covid-19 virus through physical money. With so many mobile services available, payments made using e-wallets are more convenient and faster than conventional banking systems because they save time and money. Over time, people are getting used to using digital transactions as their payment method. This study focuses on the Continuance Intention to use E-Wallet during the Covid-19 Pandemic in Indonesia, with the influence of Perceived Value, and E-Service Quality on Customer Satisfaction, as well as Government Support, Customer Satisfaction, and Perceived Health Risk on Continuance Intention to Use. Total of 351 data were collected from the users of e-wallet in the Greater Jakarta Area of Indonesia and analyzed by deploying partial least squares structural equation modeling (PLS-SEM). Our results show that only the perceived health risk variable does not affect continuance intention to use. In the context of this study, the Covid-19 virus disease is no longer a motivating factor for e-wallet users to use e-wallet continuously. However, other variables show a positive influence on continuance intention to use.

## **Keywords**

E-wallet, Covid-19, Continuance intention, Perceived health risk, and Government support

## **1. Introduction**

Technological developments have changed people's habits in conducting transactions, over the past few years, the growth and popularity of commercial mobile-based applications such as mobile services applications have been very rapid (Yang et al. 2015). Mobile-based payment systems are widely used for transactions, and making payments through actions because consumers find this method profitable (Gokilavani et al. 2018). The innovation of mobile payment methods and mobile applications come under different names but has the same function as mobile wallets, mobile payments, mobile commerce, and mobile banking (Sharma 2019).

Covid-19 pandemic encourages digital transaction activity, there has been an increase in online shopping activity by up to 400% in Indonesia (Kencana 2020). Indonesian people have adapted to the situation so that payments based on digital wallets have also become a new habit for the community. This is due to government regulations to carry out daily activities from home. This is because the spread of Covid-19 can be transmitted through paper money. Likewise,

WHO has suggested using digital payments to make a transaction to prevent the risk of Covid-19 transmission which can be transmitted by traditional payment methods from cash (Finn 2021). From the previous statement, it is known that there is a risk of Covid-19 transmission that may arise from physical cash during transactions or during transactions, which is the impetus for using e-wallet for transactions during the pandemic. Not only that, the Indonesian government supports the development of e-wallet during the pandemic, conveyed by Sri Mulyani, Indonesian Minister of Finance on December 11, 2021, government programs can be implemented and assisted by various financial technologies such as the presence of e-wallet (Yudhistira 2021), where the government has prepared a budget of Rp. 25.4 trillion for the development of information technology, where the realm of digital finance has great potential and is the main focus (Mayasari 2021). Covid-19 has indirectly increased users of Digital Wallets or e-Wallet, where its practical use makes it easier for people to carry out transaction activities. There are several e-wallet applications that are popular among the Indonesian people, such as Go-Pay, OVO, LinkAja, and Dana (Aji et al. 2021).

This study aims to examine the continuance usage of e-wallets during the Covid-19 pandemic, where the continuance use of e-wallets is influenced by the perceived value and e-service quality variables mediated by the customer satisfaction variable, along with the perceived health risk variable and government support, and is researched with a quantitative approach. This study is expected to further explain the determinants of continuance use of e-wallets and to enrich similar research that dan previously been carried out during the Covid-19 pandemic.

## **2. Literature Review & Hypothesis**

### **2.1 E-Wallet**

An electronic wallet (e-wallet) can be defined as a technology that enables users to store money digitally and make transactions with it (Alwi 2021). An electronic wallet can be interpreted as a tool to facilitate transactions without the need to carry cash (non-cash) and can be used when carrying out different activities (Megadewandanu et al., 2016). According to Bank Indonesia Regulation Number 18/40/PBI/2016 article 1 paragraph 7 “Digital wallet or e-wallet is an electronic service for storing payment instrument data, including payment instruments using cards and/or electronic money, which can also accommodate funds, and to make payments”. Therefore, it can be concluded that a digital wallet is a container and a tool for conducting a transaction in order to facilitate transaction activities which are generally carried out traditionally using money or a medium of exchange that has a physical form. Because, only by using an application that is integrated with a smartphone, a person can immediately make a transaction to the targeted person.

### **2.2 Continuance Intention to Use**

Intention to use can be seen from a person's behavior towards the object such as, the emergence of a sense of wanting to add supporting attributes, the motivation to keep using it, and the intention to motivate others to use it (Pratiwi 2021). According to Amoroso et al. (2018), continuance intention is the level of strength of an individual's intention to make repeated purchases through financial mobile applications. Based on this definition, it can be concluded that continuance intention to use is a someone's desire to repurchase or use something that become to their behavior.

### **2.3 Customer Satisfaction**

Customer satisfaction is an evaluation/assessment of whether a product or service provides a pleasant level of understanding and success which depends on several factors such as psychological, economic, and physical factors (Taberner 2016; Li et al. 2021). According to Keni and Sandra (2021) customer satisfaction is a behavior, response, and evaluation that involves emotions expressed by customers after making the purchase process. Based on this definition, it can be concluded that customer satisfaction is a level of satisfaction that involves the customer's emotional response to an item or service that has been purchased by the consumer. In previous research on e-wallet contexts, customer satisfaction has a positive and significant effect on intention to use (Miruna 2019), in line with the previous research, Abdul-Halim et al. (2020) found that satisfaction does have a positive and significant effect in continuous intention to use e-wallet. Similar results were also found in research in the context of mobile commerce (Marinković et al. 2019). To summarize previous findings, once a user is satisfied with a product/service based on their judgement, they will continuously use that product/service, in this case we hypothesize that user will use e-wallet continuously if they're satisfied with the e-wallet that they use.

H1: Customer satisfaction has a positive and significant effect on continuance intention to use e-wallet.

## **2.4 Perceived Value**

Perceived Value is the difference between total customer value and total customer costs where total customer value is the benefits that users expect from a particular product or service while total customer costs are the total costs expected by users to evaluate, obtain, use and discard a product or service, (Kotler and Keller 2016). Perceived value is the value perceived by customers regarding the exchange between what customers get and what they pay (Akmal and Trenggana 2019). In previous study with the same context of e-wallet, Perceived Value has a positive and significant effect on Customer Satisfaction (Alwi et al. 2021; Handoyo et al. 2022) So, it can be concluded that Perceived Value is an assessment of the reciprocal relationship between what a person will get and what the consumer has paid. This assessment can be measured by the level of customer satisfaction after paying and having received what has been paid. Thus, in this study we hypothesize that perceived value that e-wallet user had affects their satisfaction on e-wallet.

H2: Perceived value has a positive and significant effect on customer satisfaction.

## **2.5 E-Service Quality**

According to Akmal and Trenggana (2019) e-service quality is the most extensive and integrative online service quality model. According to Fahraka et al. (2019), e-service quality is a service quality development that starts from the traditional way, then becomes a modern service with digitalization. Thus, from these several definitions, it can be concluded that e-service quality is a development of service quality that was previously traditional and has become modern, namely internet-based or online. E-service quality was developed in order to provide services in online shopping, and conduct online transactions efficiently, effectively, accompanied by security and convenience for users. In previous research in the context e-wallet, e-service quality has a positive and significant effect on customer satisfaction (Syifa and Tohang 2020). In contrast to previous studies, e-service quality does not affect the intention to use e-wallet because its features are still very limited (Pratiwi et al. 2021). Associated with e-wallet, e-service quality is important in an e-wallet because an e-wallet with a proper developed e-service quality provides sense of convenience to users, therefore we hypothesize that the better an e-wallet e-service quality had, the more satisfied the user is.

H3: E-service quality has a positive and significant effect on customer satisfaction.

## **2.6 Perceived Health Risk**

Perceived risk is a user perception of the possibility that an action can describe the user's perceived danger as being considered overreaching (Khan et al. 2017). Perceived risk itself has various dimensions, such as financial risk (Roy et al. 2017), performance risk, psychological risk (Zhao et al. 2008). In this study, perceived risk is linked to the dimensions of disease risk (Maser and Weierman 1998). Disease risk is the possibility of being exposed to a disease (Hasan et al. 2017). Perceived health risk is a person's perception of potential health hazards that may be experienced when physically shopping at malls and stores during a pandemic (Salem and Md Nor 2020). In similar previous studies, perceived health risk has a positive and significant effect on continuance intention to use (Aji et al. 2020; Alwi et al. 2021), the same results were also found in the context of mobile payments (Daragmeh et al. 2021). Associated with the context of this research, perceived health risk is the perceived risk of being exposed to the Covid-19 virus as a disease risk during physical transaction via physical money. Therefore, we hypothesize that perceived health risk drives a person to use an e-wallet in order to prevent getting exposed to Covid-19.

H4: Perceived health risk has a positive and significant effect on continuance intention to use e-wallet.

## **2.7 Government Support**

The government support has a very important role for its people. When facing risks, the government can play a role as a manager to deal with problems or risks that will be faced (Baker and Moss 2009). Government support is a pragmatic approach that ensures at least partial impact mitigation. Large markets with strong government financial positions can maintain their connectivity more effectively than smaller markets in less developed countries (Abate

and Purwanto 2020). Based on the above opinion, we can see that the government has a big role in helping the economy to stay strong. With government intervention, more people will be able to use digital wallets as an alternative payment to avoid physical contact. In a similar study, government support has a positive and significant influence on intention to use (Aji et al., 2020). The same is also found in the context of online banking systems (Hossain et al., 2020). In contrast to the two previous studies, in the context of online banking in Colombia, government support has no effect on intention to use (Sánchez-Torres et al. 2017). To align with this context of research, with the economy being affected by Covid-19 pandemic, government provides support to all related parties on e-wallet, so that the government can mitigate the impact of Covid-19 by encouraging the citizens to use e-wallet as an alternative payment. Therefore, we hypothesize that the government puts effort on supporting citizens to use e-wallet, the citizens are encouraged to use e-wallet continuously.

H5: Government support has a positive and significant effect on continuance intention to use e-wallet.

## **2.8 Review Outcome**

To summarize all the concepts and theories that form the basis of this research, we found that continuance intention to use, which is the willingness/desire to use a service continuously (Pratiwi 2021), is affected by the customer's satisfaction where the more satisfied a user is, they are more likely to use a service continuously (Marinković et al. 2019; Miruna 2019; Abdul-Halim et al. 2020). Meanwhile in order for a customer/user to be satisfied with a service, the user must first evaluate and assess the service based on their perceived value and experience the e-service quality of a service (Syifa and Tohang 2020; Alwi et al. 2021; Handoyo et al. 2022). Considering the Covid-19 phenomenon that has occurred, perceived health risk and government support factors also have a role in affecting the continuance use of e-wallet (Aji et al. 2020; Hossain et al., 2020; Alwi et al. 2021).

## **3. Methods**

The research model comprises six constructs, including Perceived Value, E-Service Quality, Customer Satisfaction, Government Support, Perceived Health Risk, and Continuance intention to use. This study uses a survey method in its research to look for the behavior of the relationship between variables and test hypotheses about these variables. The data source that will be used in conducting the survey is the primary data source. Primary data sources are obtained through the distribution of questionnaires which will be filled out by respondents who are users of the e-wallet. All the measurement items were measured using Likert scale (i.e. 1= strongly disagree to 5= strongly agree) to express the statement of agreement. For the purpose of this study, the researcher distributes the questionnaires to respondents who meet the criteria. That way, researchers will get data on respondents who have felt the use of e-wallet, and from the results of the questionnaire, researchers can assess the influence of each variable that is related to one another. The data collected will also be more accurate because it is taken based on answers from respondents which can be measured using a Likert scale.

### **3.1 Instruments**

#### **Perceived Value**

Perceived value is measured by using 5 items adapted from Tran et al. (2020) and Dean et al. (2019) coded as follows: PV1, using an e-wallet app gives me more value compared to others. PV2, using an e-wallet application makes me happy. PV3, e-wallet application offers a variety of services that meet my needs. PV4, the experience of using an e-wallet application worth the fees charged. PV5, the fees charged for using the e-wallet application are reasonable.

#### **E-Service Quality**

E-service quality is measured by using 5 items adapted from Li et al. (2020) coded ES as follows: ES1, the speed of service in the e-wallet system is satisfactory. ES2, the interface on the e-wallet is user-friendly. ES3, competition

between e-wallet improves the service quality of e-wallet applications. ES4, the e-wallet system is easy to use and access. ES5, the quality of the e-wallet technical services provided satisfactory and well supported.

### **Customer Satisfaction**

Customer satisfaction is measured by using 5 items adapted from Tran et al. (2020), Miruna (2019), and Ryu et al (2008) coded CS as follows: CS1, I am satisfied with the overall experience in using the e-wallet application. CS2, I like to transact using the e-wallet application. CS3, I am happy with the services that the e-wallet app offers. CS4, I am happy with the promotions that the e-wallet application offers. CS5, my choice to use an e-wallet application is a wise choice.

### **Perceived Health Risk**

Perceived health risk is measured by using 5 items adapted from Aji et al. (2020) coded PH as follows: PH1, during the pandemic, I was worried about being infected by the corona virus when transacting using physical cash. PH2, I'm afraid there are droplets with the coronavirus in physical cash. PH3 I'm worried about being exposed to the coronavirus from physical cash. PH4, I don't feel safe transacting using physical cash. PH5, I feel safe transacting using e-wallet

### **Government Support**

Government support is measured by using 5 items adapted from Aji et al. (2020) and Amin et al. (2011) coded GS as follows: GS1, during the pandemic, the government urges the public to transact using e-wallet. GS2, during the pandemic, the government supported the implementation of transactions using e-wallet. GS3, during the pandemic, the government controls the development of the use of e-wallet. GS4, during the pandemic, the government supported e-wallet operations. GS5, during the pandemic, the government urges the public to transact using e-wallet.

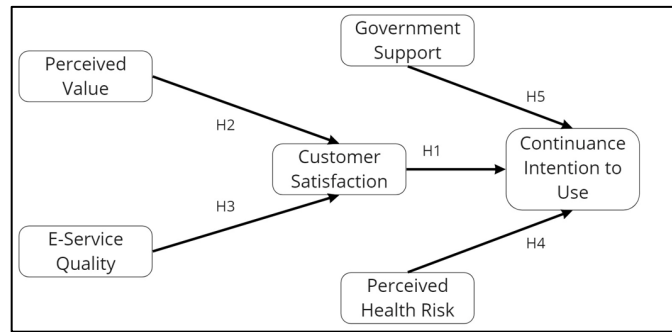
### **Continuance Intention to Use**

Continuance intention to use is measured by using 4 items adapted from Abdul-Halim et al. (2020), Singh and Sinha (2011), and Venkatesh et al. (2012) coded CI as follows: CI1, I will stick with the e-wallet as often as I do now. CI2, I will try to always use an e-wallet. CI3, I will use e-wallet more often to transact in the future. CI4, I will continue to use e-wallet as a transaction tool in the future.

## **3.2 Conceptual framework**

The conceptual framework was formed based on the literatures above, where continuance intention to use as the dependent variable is influenced by perceived value, e-service quality, perceived health risk, and government support as independent variables, and customer satisfaction as a mediator variable, which can be explained in Figure 1. Based on the description above, the assumptions in this study are, hypothesis 1 is to measure whether Customer satisfaction has a positive and significant effect on continuance intention to use e-wallet; hypothesis 2 is to measure whether Perceived value has a positive and significant effect on customer satisfaction; hypothesis 3 is to measure whether E-service quality has a positive and significant effect on customer satisfaction; hypothesis 4, is to measure whether Perceived health risk has a positive and significant effect on continuance intention to use e-wallet; hypothesis 5 is to measure whether Government support has a positive and significant effect on continuance intention to use e-wallet, which can be determined in figure 1.

Figure 1. Research Model



#### 4. Data Collection

Questionnaire was distributed through social media and online messages, where the data collection process lasted for approximately 1 month in May 2022. Respondents of this study must meet the criteria of actively uses e-wallet. The number of respondents to the questionnaire was 357, of which 6 were disqualified/invalid because they did not match the sample criteria, leaving 351 useful data to be further analyzed. Table 1 gives the profile information of the respondents.

Table 1. Respondents Profile

| Sample/Respondent Characteristics     |                               | Number (Percentage) |
|---------------------------------------|-------------------------------|---------------------|
| Gender                                | Male                          | 202 (57.5%)         |
|                                       | Female                        | 149 (42.5%)         |
| Age                                   | <18                           | 42 (12%)            |
|                                       | 18-28                         | 169 (48.1%)         |
|                                       | 29-38                         | 103 (29.3%)         |
|                                       | 39-48                         | 22 (6.3%)           |
|                                       | >48                           | 15 (4.3%)           |
| Occupancy                             | Highschool/equivalent student | 42 (12%)            |
|                                       | College student               | 129 (36.8%)         |
|                                       | Employee                      | 100 (28.5%)         |
|                                       | Civil servant                 | 39 (11.1%)          |
|                                       | Entrepreneur                  | 35 (10%)            |
|                                       | Others                        | 6 (1.7%)            |
| Education level                       | High school/equivalent        | 112 (31.9%)         |
|                                       | Diploma                       | 46 (13.1%)          |
|                                       | Bachelor                      | 180 (51.3%)         |
|                                       | Post Graduate                 | 13 (3.7%)           |
| Experience of e-wallet usage          | <1 year                       | 83 (23.6%)          |
|                                       | 1-3 years                     | 112 (31.6%)         |
|                                       | >3 years                      | 156 (44.4%)         |
| E-wallet transaction nominal (weekly) | <IDR 500.000                  | 110 (31.3%)         |
|                                       | IDR 500.000-IDR 1.000.000     | 97 (27.6%)          |
|                                       | IDR 1.000.000-IDR 1.500.000   | 17 (4.8%)           |
|                                       | IDR 1.500.000-IDR 2.000.000   | 5 (1.4%)            |
|                                       | >IDR 2.000.000                | 122 (34.8%)         |

To conclude, the majority of the respondents are male ranges from 18–28 years old. Most of the respondents are college students and achieved high school/equivalent education level. It is shown that most of the respondents have used e-wallet for more than 3 years whom spends more than 2mio IDR in using e-wallet on a weekly basis.

## 5. Results and Discussion

### 5.1 Numerical Results

In this study, validity and reliability of the data were tested in order to ensure that the measurement items measure the proposed research model and is consistent. Discriminant validity is used to determine the validity which is assessed from the square root of the average variance extracted (AVE) and is considered valid if the value obtained from the square root of the AVE is greater than the construct which indicates that each variable is more closely related to its own item compared to other variables. (Fornell and Larcker 1981). Reliability is assessed using Cronbach's alpha and composite reliability (CR) where it is considered reliable if the value of Cronbach's alpha exceeds 0.7 (Nunnally 1978) and CR exceeds 0.7 (Hair et al. 2017). The results of the test are as follows:

Table 2. Measurement Result of Reliability Test

| Variable                     | Cronbach's Alpha | Composite Reliability | Average Variance Extracted |
|------------------------------|------------------|-----------------------|----------------------------|
| Continuance Intention to Use | 0.814            | 0.876                 | 0.641                      |
| Customer Satisfaction        | 0.734            | 0.849                 | 0.651                      |
| E-Service Quality            | 0.821            | 0.873                 | 0.635                      |
| Government Support           | 0.851            | 0.889                 | 0.668                      |
| Perceived Health Risk        | 0.876            | 0.909                 | 0.667                      |
| Perceived Value              | 0.724            | 0.844                 | 0.644                      |

Several items, namely codes CI5, CS3, CS4, ES1, GS4, PV2, and PV3 were taken out, in order to meet the criteria since these 7 items did not meet the criteria.

Table 3. Measurement Result of Discriminant Validity Test

|                              | Continuance Intention to Use | Customer Satisfaction | E-Service Quality | Government Support | Perceived Health Risk | Perceived Value |
|------------------------------|------------------------------|-----------------------|-------------------|--------------------|-----------------------|-----------------|
| Continuance Intention to Use | <b>0.8005</b>                |                       |                   |                    |                       |                 |
| Customer Satisfaction        | 0.6717                       | <b>0.8072</b>         |                   |                    |                       |                 |
| E-Service Quality            | 0.3097                       | 0.3141                | <b>0.7972</b>     |                    |                       |                 |
| Government Support           | 0.3466                       | 0.3067                | 0.3575            | <b>0.8178</b>      |                       |                 |
| Perceived Health Risk        | 0.3798                       | 0.4581                | 0.1448            | 0.2080             | <b>0.8166</b>         |                 |
| Perceived Value              | 0.6699                       | 0.6707                | 0.2882            | 0.3331             | 0.3948                | <b>0.8026</b>   |

As shown in table 2 that alpha coefficient and CR exceeds 0.7. And in table 3 it can be seen that the square root number of AVE is greater than other constructs. Thus, it can be concluded that this research model is reliable and valid.

Table 4. Path Coefficient Result

| Variable  | T-Statistics | P-Value       | Hypothesis Test |
|---|--------------|---------------|-----------------|
| Customer Satisfaction -> Continuance Intention to Use | 11.4668      | 0.0000        | Accepted        |
| E-Service Quality -> Customer Satisfaction            | 3.3434       | 0.0008        | Accepted        |
| Government Support -> Continuance Intention to Use    | 3.2591       | 0.0011        | Accepted        |
| Perceived Health Risk -> Continuance Intention to Use | 1.0864       | <b>0.2774</b> | Rejected        |

|  |         |        |          |
|--|---------|--------|----------|
| Perceived Value -> Customer Satisfaction | 13.7369 | 0.0000 | Accepted |
|--|---------|--------|----------|

The path coefficient result shown in table 4 shows that out of 5 hypotheses, 4 of them are accepted where customer satisfaction has a positive and significant effect on continuance intention to use, e-service quality and perceived value has a positive and significant effect on customer satisfaction, and government support has a positive and significant effect on continuance intention to use. However, 1 one hypothesis are rejected where perceived health risk did not have a significant effect on continuance intention to use.

## 6. Conclusion

This study aims to determine the factors that affects continuance intention to use e-wallet during the covid-19 pandemic. Specifically, this study examines the relationship between perceived value, and e-service quality, on customer satisfaction, as well as customer satisfaction, perceived health risk, and government support on continuance intention to use. Based on the test results, it was discovered that perceived health risk did not have any significant effect to continuance intention to use. Perceived value and e-service quality have a direct impact on customer satisfaction, customer satisfaction and government support also have a direct impact on continuance intention to use. Based on the tests, it is seen that perceived value is the most influential factor on continuance intention to use in this research

This study may benefit several parties, firstly for digital wallet (e-wallet) companies, The results of this study can be used as material for consideration and evaluation of the obstacles faced by digital wallet companies during the Covid-19 pandemic. In addition, this research can also be used as a reference for improving the performance of digital wallet companies in the future, such as the development of the e-service quality sector which can be improved even more to increase customer satisfaction and also the collaboration between digital wallet companies and the government for the development of the company to be even better. For Indonesian government, the results of this study can be used as material to increase government efforts in developing ways of doing activities for the community, especially in conducting transactions by utilizing existing technological developments. At the same time, during a pandemic, the government can also reduce the number of Covid-19 spreads with these technological developments. In addition, this research can also be a reference in developing government projects in collaboration with digital wallet companies, so that the government has consideration in making a decision.

For this study, there are 2 main limitations that can be considered for future researches on similar topic. The first limitation is the limited time available to study this research problem and to measure changes over time is limited by several practical problems, so it is recommended in further research to be able to carry out with an optimal timeframe. In addition, there are also limited access to access several journals on several publication sites due to limited costs. It is hoped that further research will be able to enrich information and data by citing more related research journals, especially international journals.

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