

# The Effect of Convenience, Perceived Ease of Use, and Perceived Usefulness on Intention to Use E-Wallet

## (Empirical Study on Generation Z in Surakarta)

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### ABSTRACT

In today's era, technology is developing rapidly. One of these technological advances is the existence of an electronic wallet (e-wallet). A transaction using the e-wallet can be both online and offline. The study aims to describe the effect of convenience, perceived ease of use, and perceived usefulness on intention to use. The samples were generation z of Surakarta city, which amounted to 225 respondents. The collection of samples used a purposive sampling method with the criteria of generation z of Surakarta. The payment method used for transactions is an e-wallet. The research used Structural Equation Modeling (SEM) and Partial Least Square (PLS) analysis methods with the SmartPLS 3.0. The research results show that (1) convenience has a positive and significant effect on the intention to use an e-wallet. (2) Convenience has a positive and significant effect on perceived usefulness. (3) Perceived ease of use has a positive and significant effect on the intention to use. (4) Perceived ease of use has a positive and significant effect on perceived usefulness. (5) Perceived usefulness has a significant effect on the intention to use.

**Keywords:** Convenience, Perceived Ease of Use, Perceived Usefulness, Intention to Use

## 1. INTRODUCTION

In today's era, technology is developing rapidly to meet the diverse wants and needs of human life. The existence of the Internet's technological progress makes it easier for people to find information, particularly in the globalization era [43]. Technological developments in the economy result in the payment system. It functions to transfer funds from one person to another.

Money is a means of payment used by every country in the world. It functions as a legal medium of exchange and a method of measuring prices in economic activity. It causes a state's economy to run well so that people can live safely and prosperously. In other words, a state aims to make people safe and prosperous.

The development of technology in financial services is the presence of financial technology or fintech. Currently, there has been a new business model, called fintech to help people. People can transact a business by using fintech. In a business transaction, they do not need to have an account [41]. It influences people's practical lifestyles, facilitates and simplifies every financial transaction.

People have unconsciously used fintech because of its easy use. It produces electronic finance [41].

At the beginning of its introduction, e-money or electronic money was shaped a chip put in a card. Currently, however, it is also published in a media that is connected to a server. Similarly, it can be used for various payments.

The development of the present payment tool is an electronic wallet (e-wallet). It is the product of financial technology development apply the internet and it can be used as a means of payment. It can function as a means of storing money and making payment transactions both online and offline. One form of electronic money is an electronic wallet. The difference is in the medium. Without card media and with smartphones, people can use it for various kinds of transactions [52]. In the early, the payment method was in cash. By using an e-wallet or digital wallet, the payment method changed to non-cash. People switch to non-cash because of the presence of a non-cash payment system. Electronic wallets can speed up transactions compared to cash.

The purpose of an e-wallet is to make it easier for users to store their money in electronic form and they can use it for making transactions conveniently, easily, and effectively. Online shopping is one of the people's activities to meet their daily wants and needs. It can cause the use of e-wallets to increase. By registering on the application without requiring a credit check, the ease of obtaining access to the electronic tool makes the e-wallet recognized by the public. It also allows users to transact in various types of online transactions.

The types of e-wallet currently used in Indonesia include ShopeePay, GoPay, OVO, DANA, and Link Aja. (1) GoPay is electronic money used to transact via Gojek. (2) OVO is an electronic money application that allows users to make transactions while providing rewards in the form of OVO points. (3) ShopeePay is an electronic money facility that functions to transact online with the Shopee application. (4) DANA is a digital wallet that allows users to transact in non-cash and without using cash and cards. (5) LinkAja is an electronic money facility in an application used for easy and practical non-cash transactions.

Generation z is the generation born from 1997 to 2012. In 2021, this has an age range of 9-24 years. The generation has an interesting behavior, namely a cashless lifestyle. It means that making a payment is non-cash.

The technology acceptance model was developed by [11]. The study describes the extent of someone's willingness to do something or use technology. The TAM approach is the standard model in behavioral research [14]. The TAM model integrates two aspects related to an individual's beliefs in making decisions, perceived usefulness and perceived ease of use [15]. Intention to use the user will appear when the digital wallet is easy to use and has benefits. The early study shows a great influence of perceived ease of use and perceived usefulness on intention to use. The development of the TAM model is adding convenience variable

Convenience is a condition where an individual feels comfortable when using a technology [16]. According to [53] convenience is one of the main elements that make

consumers choose mobile payments over the credit card method. It is associated with elements that generate utility of time and area for users [9]. The research results by [3] show a positive influence of convenience on intention to use.

The purpose of the studies by [34] turned into taking the impact of convenience on perceived usefulness. The research result shows a positive influence of convenience on perceived usefulness. The research by [54] also shows a positive influence of convenience on perceived usefulness.

According to [47], perceived ease of use is the level of a person's confidence when using technology that can decrease his or her effort. The research by [33] shows a significant impact of perceived ease of use on intention to use the ticket.com mobile application.

TAM explained that the user's perception of the benefits of new technology is mainly influenced by its ease [23]. The research by [54] shows a positive influence of perceived ease of use on perceived usefulness.

According to [18], the perception of benefits shows an assessment of the benefits provided by the application to make it easier to obtain the desired service. Electronic payment systems have many benefits greatly needed by the public, such as facilitating payments because they only require a smartphone connected to the internet to perform various transactions. The research by [56] shows a positive influence of perceived usefulness on intention to use m-payment services.

If e-wallet users are easy to use an e-wallet, it will cause perceived usefulness of e-wallet in users, thereby encouraging their intention to use it. This study is to analyze the effect of convenience, perceived ease of use, and perceived usefulness on intention to use an e-wallet.

## 2. LITERATURE REVIEW

### 2.1 Technology Acceptance Model (TAM)

One research model that explains the adoption of information technology to users is the Technology Acceptance Model (TAM) [11]. TAM is a study that explains the acceptance of a person for the use of an information technology system. The target of TAM is to describe the elements that determine an information technology system operated by users.

Two main constructs of TAM into the TRA model are the perceived ease of use and perceived usefulness. The TAM framework shows that once users are offered a new technology, their selection to adopt the technology is influenced by two factors, videlicet perceived ease of use and perceived usefulness.

TAM emphasizes two user perceptions of how useful the user feels and how easy the system is used by the user. There are two main elements affecting a person's acceptance of technology. TAM has notably been examined regarding the main problems with TAM and extra elements that affect the adoption of technology. TAM can investigate users' interests and decisions to use an e-wallet.

## 2.2 E-Wallet

According to [42], an electronic wallet is an electronic facility that serves to insert payment instruments such as e-money, used as a method of charge. An e-wallet is a type of electronic card, used for transactions made online through a computer or a smartphone. Its utility is the same as a credit or debit card. According to [26] e-wallet is an electronic service in the form of an application that contains electronic money or funds used for non-cash transactions. Based on the explanation above, an e-wallet is an electronic payment method using electronic money through an application on a smartphone.

Some advantages of e-wallet include (1) avoiding counterfeit money, (2) speeding up transactions, (3) avoiding the spread of viruses/bacteria, (4) working effectively and efficiently, and (5) completing transaction history.

The types of e-wallets are electronic wallets often used in Indonesia are ShopeePay, GoPay, DANA, and LinkAja. ShopeePay is an electronic service owned by PT. Shopee Indonesia in the Shopee application and can be used as an online payment tool. Nowadays, it can also be used as an offline payment method at outlets that have a relationship with Shopee. Users can top up their balance via ATM, e-banking, and the nearest mini-market that has collaborated with Shopee. GoPay is an electronic service owned by PT. Go-Jek Indonesia in the Gojek application. In the early, GoPay was used as a payment method for various Gojek services such as GoRide and GoFood. Nowadays, GoPay can also be used as an electronic payment method at outlets that have collaborated with Gojek. Users can top up their balance via ATM, e-banking, and the nearest mini-market that has collaborated with Gojek. OVO is an electronic service owned by PT. International Visionet. It is used as a means of payment at outlets, stores that have collaborated with OVO. Similarly, it can also be used for various transactions. The OVO application is available on the Play Store or App Store. Users can top up their balances through i-banking, ATMs, and OVO partner outlets or stores.

DANA is a digital service that can accelerate non-cash transactions. The DANA application is available on the Play Store or the App Store and can only be used with mobile phones. LinkAja is an electronic service

contained in an application belonging to BUMN. It is easy to use and practical for making non-cash transactions. It can be used as a payment method at outlets that have collaborated with it. It can also be used for various transactions such as BPJS, electricity, and TV bills.

## 2.3 Intention to Use

According to [11], interest is a person's level of interest in doing something. According to [28] interest is a behavior that appears after getting a boost from a product. Interest in using an e-wallet is described as someone's intention to use it as a payment method. Intention determines whether someone will take an activity, or not. Interest is useful as an impetus to carry out a certain activity [45].

## 2.4 Convenience

In general, people will trust the advantages of technology if it is based on the intention to simplify their affairs and tasks [35]. Convenience is one of the vital elements that determine the achievement of cellular commerce [53].

Convenience is described as the condition of someone using technology and he or she feels comfortable taking activities [16]. If a person who uses a new technology feels happy, he or she will feel satisfied and cause a sense of comfort for the technology. [4] states that if the users' level of comfort in the user increases, their behavior in using it improves.

Convenience is associated with factors that generate utility of time and area for users [9]. [32] assumes that conditions that include the existence of different alternatives and times when using services affect the user's interest in using a cellular facility. Increased convenience can make it easier for users to transact anywhere and anytime.

## 2.5 Perceived Ease of Use

Perceived ease of use is taken into consideration as a key aspect of the adoption of new technology [16]. According to [16], perceived ease of use is defined as what extent of a user's confidence in the technology is easy to use.

The belief that technology is simpler to apply enables the users to simplify their tasks [55]. On one hand, users will assume that that digital wallet is complicated, excessive-tech, and hard to use. On the other hand, they will have a demand for a fast and convenient payment method. Consequently, users expect to learn and use digital wallet services easily. For example, a digital wallet application can be downloaded and installed, the operational process is easy and can be learned, and transactions are easy to make.

Similarly, other users find the technology to be useful and it encourages their willingness to apply it [24]. If the e-wallet application is simple to learn for its users, their perception of the e-wallet benefits will increase and they tend to adopt it.

## 2.6 Perceived Usefulness

TAM and TAM2 suggest that perceived usefulness is preceding behavior and attitude interest [49]. According to TAM, perceived usefulness is the extent to which the user's faith in technology can improve and enhance its effectiveness and performance [12].

According to [16], perceived usefulness is an individual's perception level of a technology that can grow work performance. Perceived usefulness is the subjective perception of users where they believe that using certain technologies can improve the performance of their work. Therefore, it is a subjective perception of decision-making techniques.

According to [18], perceived usefulness shows an assessment of the benefits provided by a technology to simplify for users to gain the desired services. A good assessment of perceived usefulness can result from a person's interest in using technology. If a person trusts that technology can be useful, he or she will use it. The benefits of technology are closely related to productivity, effectiveness, performance in carrying out a task, the need for work, and overall benefits [38].

Digital wallets provide many benefits compared to using cash and non-cash. They can avoid miscalculation of returned money and speed up transactions compared to other payment methods.

## 3. HYPOTHESIS

Convenience measures how comfortable the user is when using the e-wallet. [1] examined the effect of convenience on intention to use e-banking. The study involved 60 respondents. The research result in a significant influence of convenience on intention to use it. [3] also examined the impact of convenience on intention to use e-commerce. The research involved 193 respondents. The research result shows a significant influence of convenience on intention to use it.

[54] investigated the impact of convenience on the perceived usefulness of m-payment users in Jakarta. The research was conducted for two weeks by distributing questionnaires via the Google Form to high school and university students, and employees of 201 respondents. The research result shows that convenience has a significant influence on perceived usefulness. [21] also investigated the effect of convenience on perceived usefulness. The research was conducted for one month by distributing questionnaires via the Google Form and social media to people living in Jakarta, Bogor, Depok,

Tangerang, and Bekasi (JABODETABEK). The study involved 100 respondents with an age range of 17-50 years as the productive age of students to workers.

The goal of the research [7] was to specify the effect of perceived usefulness on intention to use m-payment. The research result shows the effect of perceived usefulness on intention to use it. [29] also investigated the effect of perceived usefulness on intention to use OVO. The study involved 120 respondents in Solo residency. The research result states a significant influence on the perceived usefulness of intention to use OVO.

[5] in his research concluded that perceived usefulness mediate the effect of convenience on intention to use. If the users feel convenient, they create perceived usefulness of them that causes them to pay intention to use it.

The following are the hypotheses.

H1: Convenience has a positive and significant effect on the intention to use an e-wallet.

H2: Convenience has a positive and significant effect on the perceived usefulness of e-wallet users.

H3: Perceived usefulness have a positive and significant effect on the intention to use an e-wallet.

H4: Perceived usefulness mediate the effect of convenience on intention to use an e-wallet.

Perceived ease of use measures how easy an e-wallet is for users to apply. [57] investigated the impact of perceived ease of use on intention to use m-payments. The research was conducted in China for one month and involved 245 respondents using survey data collection methods. The research respondents' age ranged from 18 to 40. The research result shows the perceived ease of use influences on intention to use m-payment. [27] also examined the effect of perceived ease of use on intention to use DANA. The research was conducted in Jakarta and involved 200 respondents. The research results state the perceived influence of ease of use on intention to use DANA. If a new technology gets complicated, users will feel reluctant to learn how to operate it and to spend more time. Mobile payments that are easy to apply and simple to operate by users will cause them to pay intention to use mobile payments.

[48] examined the influence of perceived ease of use on the perceived usefulness of GoPay users on the Gojek application. The research was carried out by distributing the online questionnaire to GoPay users in Padang (West Sumatra). The study involved 210 respondents. The research result suggests a significant effect of perceived ease of use on perceived usefulness. Another research was carried out by [31] involving 450 respondents. The research results suggest a positive and significant effect of perceived ease of use on perceived usefulness.

[17] investigated the effect of perceived usefulness on intention to use m-payments. The research was carried out for three months by distributing questionnaires to the public through the LinkedIn and Facebook platforms. The study involved 539 respondents. The research results suggest a significant impact of perceived usefulness on intention to use m-payment. [20] also investigated the perceived usefulness on intention to use the Go-Pay e-wallet by involving 291 respondents who used GoPay in Jakarta. The research results show a significant influence of perceived usefulness on intention to use it.

[21] concluded that perceived usefulness mediates the impact of perceived ease of use on intention to use. The technology with an easy system to operate will influence perceived usefulness, thereby causing users to use it.

The following are the hypotheses.

H5: Perceived ease of use has a positive and significant effect on the intention to use an e-wallet.

H6: Perceived ease of use has a positive and significant effect on the perceived usefulness of e-wallet users.

H7: Perceived usefulness mediate the effect of Perceived ease of use on intention to use an e-wallet.

## 4. METHOD

The population is a set of humans used as the research subjects [46]. The population in this research is generation z using electronic wallets in Surakarta, amounting to 41,082 people with an age range of 20-24

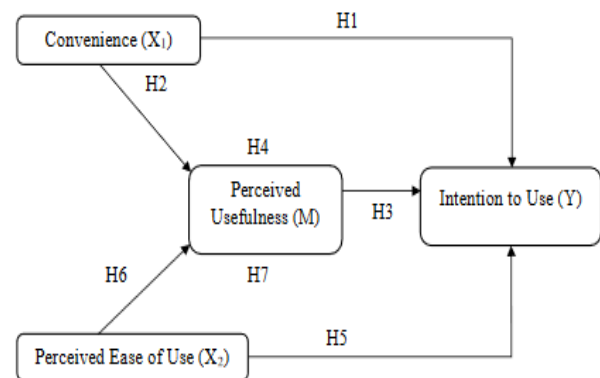
**Table 1.** Outer Model

Variable	AVE	CR	CA
Convenience (X1)	0.561	0.862	0.797
Perceived Ease of Use (X2)	0.666	0.909	0.874
Perceived Usefulness (M)	0.697	0.932	0.913
Intention to Use (Y)	0.779	0.934	0.906

The validity test used the Average Variance Extracted (AVE) value. Table 1 reports the AVE score of each variable is  $> 0.5$ , so the variables used can be said to be valid.

Furthermore, the reliability test used composite reliability (CR). If the composite reliability (CR) score of a construct is  $> 0.7$ , it is reliable. Table 1 reports the

years. The collection of samples used a purposive sampling method fulfilling the criteria of generation z using the payment method of e-wallet for making transactions. Data collection distributed online questionnaires to 225 respondents. Measurement of variables used a Likert Scale. There were five levels of points in the research questionnaires, namely (1) strongly agree (five), agree (4), neutral (3), (4) disagree (2), and strongly disagree (1). These are Structural Equation Modeling (SEM) and Partial Least Square (PLS) with the help of SmartPLS 3.0.



**Figure 1.** Roadmap

## 5. ANALYSIS

composite reliability (CR) score of each variable is  $> 0.7$ , so the variables used are reliable.

The score of Cronbach's alpha (CA) confirms the result of the reliability. If the Cronbach's alpha (CA) score of each variable is  $> 0.7$ , the variables used are reliable. Table 1 shows the score of Cronbach's alpha (CA) for each variable is  $> 0.7$ , so it can be said that the variables used are reliable.

**Table 2.** Multicollinearity Test

Variable	Convenience (X1)	Perceived Ease of Use (X2)	Perceived Usefulness (M)	Intention to Use (Y)
Convenience (X1)			1.435	1.529
Perceived Ease of Use (X2)			1.435	2.055

Perceived Usefulness (M)				1.979
Intention to Use (Y)				

After the validity and reliability test, the next is the multicollinearity test. The purpose of the study is to find out whether or not there is a correlation among the independent variables. Table 2 shows the VIF score of **Table 3. R-Square ( $R^2$ )**

Variable	$R^2$	Adj $R^2$
Perceived Usefulness	0.495	0.490
Intention to Use	0.603	0.597

The feasibility analysis of the model used goodness of fit. The goodness of fit measurement is obtained from the Q-Square score. The higher the Q-Square score, the better the research model. The following is the result of the Q-Square calculation:

$$\begin{aligned}
 \text{Q-Square} &= 1 - [(1-R^2_1) \times (1-R^2_2)] \\
 &= 1 - [(1-0.597) \times (1-0.490)] \\
 &= 1 - (0.403 \times 0.510)
 \end{aligned}$$

$$= 0.79$$

Referring to the calculation above, the Q-square score is 0.79. This means that this research model can describe the diversity of research data by 79% while the remaining 21% is described by other elements outside this study model. This research model has good goodness of fit.

### 5.1. Hypothesis Test

**Table 4. Direct Effect**

Effect Test	Original Sample	T-Statistic	P-Values
Convenience → Intention to Use	0.131	2.340	0.020
Convenience → Perceived Usefulness	0.217	3.993	0.000
Perceived Ease of Use → Intention to Use	0.343	5.268	0.000
Perceived Ease of Use → Perceived Usefulness	0.560	8.937	0.000
Perceived Usefulness → Intention to Use	0.413	6.423	0.000

This test used the P-Values value. If the P-Values < 0.05, the hypothesis can be accepted. The research has a direct impact

due to the existence of independent, dependent, and intervening variables.

Table 4 reports that convenience has a positive and significant influence on intention to use and perceived usefulness. Perceived ease of use has a positive and significant influence on intention to use and perceived usefulness. Perceived usefulness has a positive and significant effect on the intention to use.

**Table 5. Indirect Effect**

Effect Test	Original Sample	T-Statistic	P-Values
Convenience → Perceived Usefulness → Intention to Use	0.090	3.231	0.001
Perceived Ease of Use → Perceived Usefulness → Intention to Use	0.231	5.457	0.000

Table 5 reports that perceived usefulness mediates the influence of convenience on intention to use. Perceived usefulness mediates the effect of perceived ease of use on intention to use.

## 6. DISCUSSION

### 1. The effect of Convenience on Intention to Use

Statistical results show that convenience has a positive and significant effect on the intention to use. This condition implies that the higher the convenience, the higher the intention to use it. It is relevant to the research by [3], stating that convenience affects intention to use.

### 2. The effect of Convenience on Perceived Usefulness

Statistical results show that convenience has a positive and significant effect on perceived usefulness. This condition means that the higher the convenience, the higher the perceived usefulness. It is relevant to the research by [54], suggesting that convenience affects perceived usefulness.

### 3. The effect of Perceived Usefulness on Intention to Use

Statistical results show that perceived usefulness has a positive and significant effect on the intention to use. This means that the higher the perceived usefulness, the higher the intention to use it. This is relevant to the research by [29], showing that perceived usefulness affects intention to use.

### 4. The Effect of Convenience on Intention to Use mediated Perceived Usefulness

Statistical results show that convenience has a positive and significant effect on the intention to use mediated by perceived usefulness. This means that if convenience results in perceived usefulness for the user, it causes the intention to the user. This is relevant to the research by [5], stating that perceived usefulness mediates convenience on intention to use.

### 5. The Effect of Perceived Ease of Use on Intention to Use

Statistical results show that perceived ease of use has a positive and significant effect on the intention to use. This means that the higher the perceived ease of use, the higher the intention to use it. This is in line with the research by [57] which states that perceived ease of use affects intention to use.

### 6. The Effect of Perceived Ease of Use on Perceived Usefulness

Statistical results show that perceived ease of use has a positive and significant effect on perceived usefulness. This condition means that the higher the perceived ease of use, the higher the perceived usefulness. This is relevant to the research by [31], stating that the perceived ease of use affects the perception of usefulness.

### 7. The Effect of Perceived Ease of Use on Intention to Use mediated by Perceived Usefulness

Statistical results show that perceived ease of use has a positive and significant effect on the intention to use mediated by perceived usefulness. This means that if the perceived ease of use leads to perceived usefulness to the user, it can cause intention to the user. This is in line with the research by [21], stating that the perceived usefulness mediates perceived ease of use on intention to use.

## 7. CONCLUSION

Based on the analysis, all the hypotheses are confirmed. The limitation of the problem in this study is that the independent variables are convenience and perceived ease of use and the dependent variable is the intention to use. The mediating variable is perceived usefulness. The samples are the respondents using an e-wallet. Suggestions to further researchers are to add other variables. Suggestions for startup companies are to increase the benefits for users through convenience and perceived ease of use to encourage intention to users.

## AUTHORS' CONTRIBUTIONS

The authors contributed to writing our research paper, entitled *The Effect of Convenience, Perceived Ease of Use, and Perception Usefulness on Intention to Use E-Wallet*.

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