# The Phenomenon Of E-Wallet Usage in Indonesia Based on The Theory Of Technology Acceptance Model

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## Abstract

The diversity of people's needs in financial context nowadays has pulled many financial companies to offer financial service using technology, the most popular is an e-wallet (electronic wallet). Currently, more people are shifting their financial activity to use an e-wallet. While e-wallet has become more prevalent in many countries including Indonesia, it is essential to understand the basic concept of user behavior towards e-wallet usage. Based on the previous study, this phenomenon can be explained using the technology acceptance model theory. Therefore, this study discusses the user's views regarding the use of e-wallet and the factors that influence behavioral intention to use based on the theory of technology acceptance model. The results of this study discuss two main factors influencing people to use an e-wallet, namely perceived ease of use and perceived usefulness

## Keywords
e-wallet, technology acceptance model, perceived ease of use, perceived usefulness, intention to use.

## 1. Introduction
Technological developments have shaped significant changes in people's lives, one of which is the needs of transactions and financial management (Farmania et al. 2021). For this reason, many companies innovate in financial technology, one of which is often known as an electronic wallet (e-wallet) or electronic wallet. Moreover, they are currently trying to expand their market share in the financial company sector, often known as fintech (Pradipta & Tresia 2021). In Indonesia, several fintech companies even have a number of users up to millions of consumers and have collaborated with many partners.

According to a survey by www.katadata.co.id in 2018, around 25 million online payment users will continue to grow in Indonesia. In addition, according to a survey from DailySocial 2018, Gopay is the most popular online payment in Indonesia, followed by OVO in second place. Referring to Article 1 paragraph 7 of Bank Indonesia Regulation number 18/40/PBI/2016 of 2016 concerning the Implementation of Payment Transaction processing, In addition, Bank Indonesia as the Central Bank in Indonesia has also issued a policy called the National Non-Cash Movement (GNNT) so that people move to use the non-cash payment system. E-money is a new form of money in Indonesia, while an e-wallet is an electronic wallet that can be used via a smartphone. GNNT was formed to increase public understanding of cashless transactions by increasing this awareness in changing the customs and culture of the community from cash transactions to non-cash transactions in their economic activities (Suroso et al. 2021).

The definition of electronic money based on Bank Indonesia regulation number 11/12/PBI/2019 concerning electronic money states that e-money and e-wallet are electronic payment instruments that have the following elements:
1) Issued based on the value of money that was deposited in advance by the holder to the issuer
2) The value of money is stored electronically in a medium such as a server or chip
3) Can be used as a means of payment to swords that are not the issuer of the electronic money
4) The value of electronic money deposited by the holder and managed by the issuer is not a deposit as referred to in the law governing banking

For this reason, e-wallet and e-money have become legal digital payment instruments in Indonesia that are directly supervised and protected by Bank Indonesia (Ridaryanto et al. 2019). In Indonesia, many types of e-wallet applications such as Go-Pay, OVO, LinkAja, Dana, Jenius, iSaku, ShopeePay, and so on have been registered with OJK. E-wallet users must be protected by law so that e-wallet owners operating in Indonesia can maintain the security of their users' funds (Octora 2021). The law governing procedures for administering electronic money related to licensing and its implementation in Indonesia is regulated in Bank Indonesia Regulation Number 20/6/PBI/2018 concerning Electronic Money. Meanwhile, in regulating customers' protection using an e-wallet, Bank Indonesia carries out its duties by issuing Bank Indonesia Regulation Number 16/1/PBI/2014 concerning Consumer Protection for Payment System Operators.

In the Consumer Protection Regulation there are several main points related to the obligations of e-wallet companies in operating in the Indonesian market share, including e-wallet must be able to provide a reliable technology system, must be responsible to consumers for any errors, *technology errors,* and other losses, must provide information regarding the uses, risks, and all forms of consequences of using an e-wallet, and keep the confidentiality of any data and information provided by consumers .

Based on previous research, an e-wallet is defined as a product of fintech (financial technology) that uses internet intermediaries in its operations as an electronic payment instrument (Hassan et al. 2015). E-wallet has been widely used in recent years because many users have experienced the convenience, speed, and security of using e-wallet in conducting any online transaction (Salah Uddin et al. 2014). Further, according to (Maulinda 2015) There are five characteristics of e-wallet, namely:

1.Practical: the use of e-wallet is considered more practical because in the transaction process, the user only requires *smartphone* to be able to carry out any transaction so that it does not require physical contact between the seller and the buyer as is often the case in conventional transaction processes (cash)
2.Faster: The following characteristic of e-wallet that many users favor is the speed of transactions. It allows consumers to make transactions to anyone at any time quickly just by using the e-wallet application
3.Comfortable: the efficiency and effectiveness of the use of e-wallet as a means of payment of course provide convenience for consumers in transacting where e-wallet users do not need to spend time, effort, and additional costs if they want to make any transactions
4.Easy: Another characteristic of e-wallet is the ease of transactions where consumers can follow the instructions listed in the application quickly and easily
5. Safe: The final e-wallet characteristic is security, and this is an important point that many users pay attention to because it involves the security of the money stored and the transactions made.

The advantages offered by e-wallet make the growth of e-wallet market share continue to increase over the past few years to create a new trend in modern society, namely the cashless society (Abdullah, Redzuan, & Daud, 2020; Xena & Rahadi, 2019), which is defined as a cashless financial lifestyle. The increasing number of smartphone users in the current era and the increasingly diverse needs of society have made e-wallet overgrow to bridge the transaction needs of their users quickly, accurately, and safely. However, in providing these technological innovations, companies must consider the level of technology acceptance in society. It is explained through the technology acceptance model (TAM) theory. This study will analyze the phenomenon of using e-wallet in Indonesia based on the theory of technology acceptance model.

## 1.1 Objectives

This study presents the comprehensive methodology to describe user's perception of e-wallet usage using the theory of TAM (technology acceptance model). This study shows the main factors that influence the use of e-wallet which

are perceived ease of use and perceived usefulness. The result of this study aims to analyze how users perceived the benefits of e-wallet and the easy way offered in doing online payment. It also shows the impact of these two factor in influencing users intention to use based on the growing literature of variable of behavioral intention to use.

## 2. Literature Review

### 2.1 Technology Acceptance Model (TAM)

In the current era of technological innovation, an approach is needed in developing technology to be accepted and used by the target users to be achieved. The theory that discusses technology acceptance in society is the Technology Acceptance Model (TAM). TAM theory is used to explain and predict the process of technology acceptance by individuals (Sukis Warningsih 2021). This theory was first proposed by (Davis, 1989) which explains that information technology can affect and be used for human life if the technology provides individual acceptance for use in certain activities. So basically, TAM explains that technology acceptance is based on attitude toward using, subjective norms, and behavioral intention to use, which affects actual usage.

Therefore, TAM has become a critical theory in shaping the framework for adopting information technology user behavior for individuals. TAM is basically an adoption of a previously introduced theory, namely Theory Reasoned Action (TRA) developed by (Fishbein et al. 1975). The TRA theory explains the reasons for the attitude of users to use technology related to actual interests and usage. So that in TRA there are three variables, namely attitude toward using, intention to use, and actual use of actual usage. TAM is a theory that explains technology acceptance based on external variables offered by the technology, namely perceived usefulness and perceived ease of use (Schierz et al. 2010).

The TAM model explains that a technology introduced to the public has two main factors needed by users: the perception of the usefulness or usefulness of the technology and the perception of ease of use. So basically the TAM model emphasizes two principles, namely "what is the use of the technology for users" and "how easy is the technology to operate". Research by (Seetharaman et al. 2017) mentions that these two factors are fundamental determinants of consumer good technology acceptance. So that the complete theory of TAM can be described as follows:

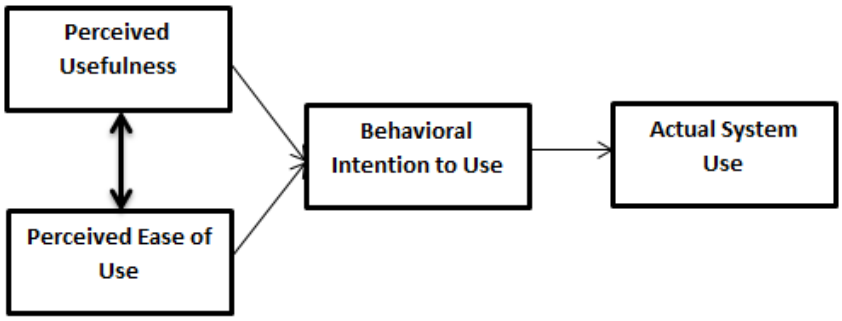


Figure 1. TAM Model

Based on Figure 2.1 above, six constructs (variables) were developed to explain technology acceptance. The variables of perceived ease of use and usefulness are constructs that build the TAM Model theory, while usage attitudes, interest in using, and actual use are included in the TAM Model theory. The explanation of each construct in the TAM model theory is as follows:

### 2.2 Perceived usefulness

Perceived usefulness is defined as an individual's perception of how well the benefits can be obtained from technology in improving individual work performance (Sondakh 2017). Other research by (Phonthanukitithaworn et al. 2015) explained perceived usefulness as how far a person believes that using a particular technology can improve performance and productivity. Perceived usefulness indicates the extent to which a person believes that using the technology will liberate him from the usual efforts carried out traditionally so that he will be able to increase one's

performance and productivity. According to (Davis 1989; Yoon & Kim 2007) The indicators for measuring perceived usefulness in e-wallet technology are as follows:

1. E-wallet can increase individual productivity
With e-wallet technology, individual productivity is considered to increase, such as when they want to make transactions for specific purchases or payments that require speed, they will be able to reduce working time so that individuals can be more productive.
2. E-wallet can increase work effectiveness
The next indicator is that e-wallet can increase work effectiveness where the security and accuracy of the system used will be able to reduce transaction errors that can occur in conventional transactions so that transactions are carried out more effectively.
3. E-wallet can reduce transaction time
Using an e-wallet can reduce the time required for conventional transactions (cash).
4. E-wallet is beneficial
The speed, security, accuracy, ease of use, and convenience provided by e-wallet technology are felt to be very useful for users

**2.3 Perceived Ease of Use**
According to (Lee et al. 2012; Ozturk, 2016), perceived ease of use is the consumer's view of how certain technologies can make it easier for them to carry out certain businesses. According to (Davis 1989) on (Yang et al. 2015), perceived ease of use refers to consumer confidence in the performance or performance of certain online payments that can free consumers from excessive efforts when using the e-payment. It means that consumers believe that by using e-payment, they do not have to make more effort than before using it.

Meanwhile, (Turel et al. 2011) said that perceived ease of use represents the level of innovation of technology to make it easier to understand, use, and learn. According to (Zhu 2016), in their research on social networking sites, perceived ease of use could positively affect customers' attitudes. If the perceived ease of an online technology increases or is easier to use, consumers will be more interested in using it repeatedly. This level of perceived convenience can be obtained from comparing e-payments and cash transactions.

According to (Phonthanukitithaworn et al. 2015) there are several indicators or benchmarks for measuring perceived ease of use, namely as follows:
1. Technology is easy to learn
The first indicator is that the use of e-wallet technology is easy to learn, and before entering the types of services, the e-wallet application must provide guidance on how to use and or operate the application that is easy to understand.
2. The transaction process does not require significant effort
The next indicator of perceived convenience is that e-wallet technology does not require strenuous efforts to operate, such as complex approvals, and through many parties
3. The process is easy to understand
4. E-wallet technology is easy to use for needs

In different discussion, according to (Jogiyanto 2007) indicators of perceived ease of use include the following:
1. Easy to learn
The e-wallet technology used through the application is easy to learn and does not make it difficult for users
2. Easy to control
The operating system used in smartphone is easy to control as we wish
3. Clear and easy to understand
The technology system used must be clear based on services and procedures and can be understood well
4. Flexible
Technology must be flexible in providing transaction services that consumers want
5. Easy to operate
The system used must be able to make users proficient in using it so that it makes it easier for users to operate various services in it
6. Easy to use
Technology must make it easy to use

## 3. Methods

This study uses descriptive analysis to explain the phenomenon of e-wallet usage in Indonesia based on the results of a survey collected from 870 respondents regarding the use of e-wallet which was studied based on the theory of technology acceptance model (TAM). The sampling technique was carried out using a random sampling method by distributing an online questionnaire

## 4. Results and Discussion

The results of this study were examined from the theory of technology acceptance model regarding several variables, namely perceived usefulness, perceived ease of use, and behavioral intention to use. This study uses research indicators based on previous research, namely research by (Davis 1989; Jarvenpaa et al. 2000; Yang et al. 2015) which is then used as a statement on the research questionnaire. The results of this study are as follows:

### 4.1 Perceived Usefulness

The widespread use of e-wallet in Indonesia is caused by its benefits, one of which is the ease of use of e-wallet in conducting transactions. In contrast to bank transactions, users do not have to carry documents to make transactions in e-wallet and do not have to go to an atm or bank. By using an e-wallet, everyone can make transactions only through a smartphone, saving more time. It is the results of a survey of 870 respondents regarding the following perceived usefulness indicators:

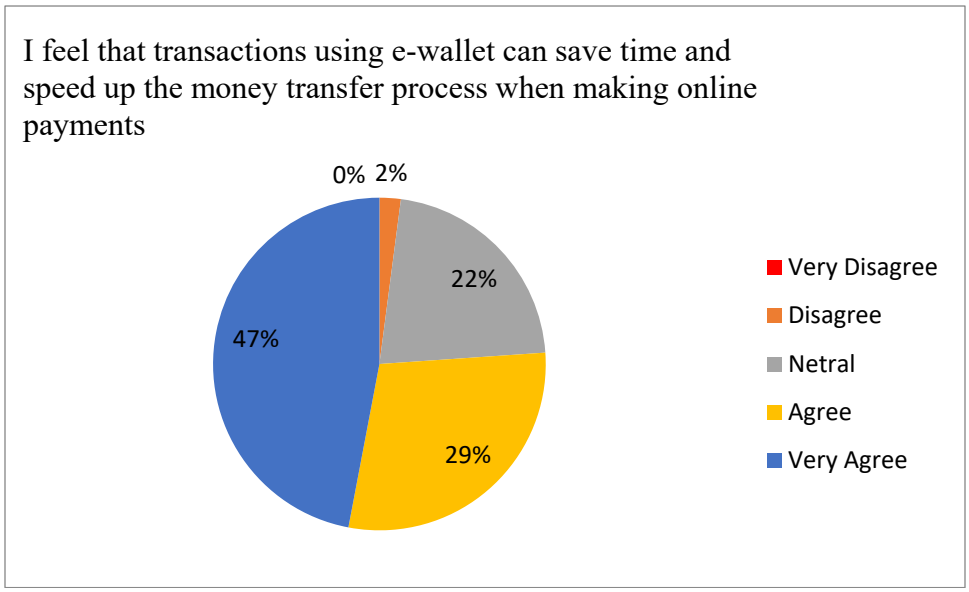


Figure 2. Result of First Indicator of Perceived Usefulness

Based on the survey results above, 47% or about 409 respondents said they strongly agree that transactions via e-wallet can save time, while 29% or 253 other people say they agree with the perceived ease of use indicator. Only 2% or 18 respondents disagreed, indicating that time efficiency is the primary indicator that users choose e-wallet as a transaction tool. In addition to time efficiency, this study also analyzes perceived usefulness based on time and energy efficiency in conducting transactions. Here are the survey results:

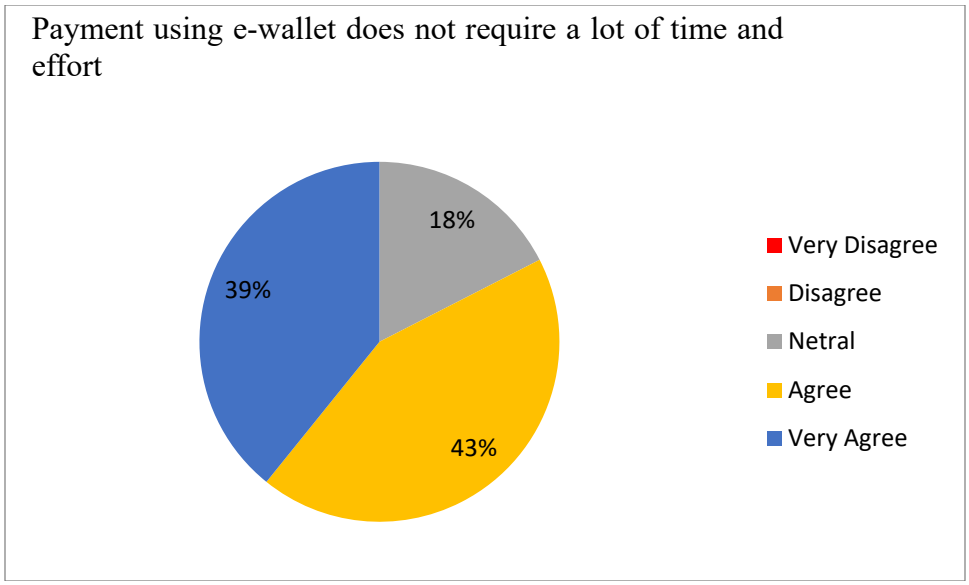


Figure 3. Result of Second Indicator of Perceived Usefulness

Based on the survey results above, the majority of respondents (718 respondents) said they agreed and strongly agreed that e-wallet payments can save time and effort. If in a conventional or bank transaction, someone has to come directly to the place of the transaction, which will take time and require more energy to get there, then through an e-wallet, transactions can be done anytime and anywhere with just a smartphone.

**4.2 Perceived Ease of Use**

The usefulness felt by the respondents above is supported by the ease of use of the e-wallet. The use of smartphone technology in the operation of transactions through e-wallet is shown to provide convenience to users to make transactions quickly and easily. It is in accordance with the results of the survey regarding the following perceived ease of use:

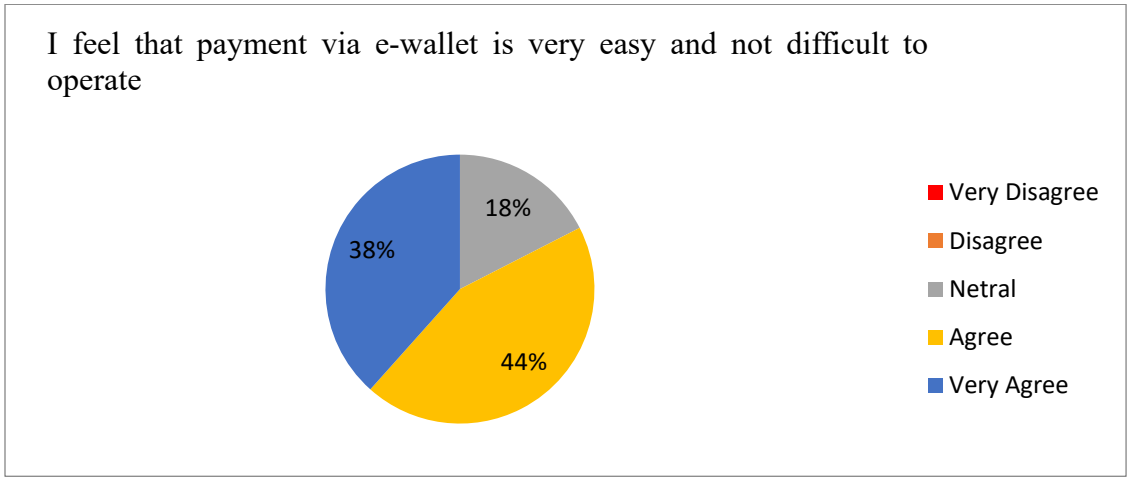


Figure 4. Result of First Indicator of Perceived Ease of Use

Based on the survey results above, more than 600 respondents (82%) agreed that payment using e-wallet was very easy and not complicated. It supports the statement on perceived usefulness where the usefulness felt by consumers, namely the time efficiency of using e-wallet in conducting transactions, is caused by the perceived ease of use, namely the ease of using e-wallet in conducting transactions. The ease experienced by e-wallet users is supported by complete

and adequate instructions for using the e-wallet. It is based on the survey results on the following two indicators of perceived ease of use:

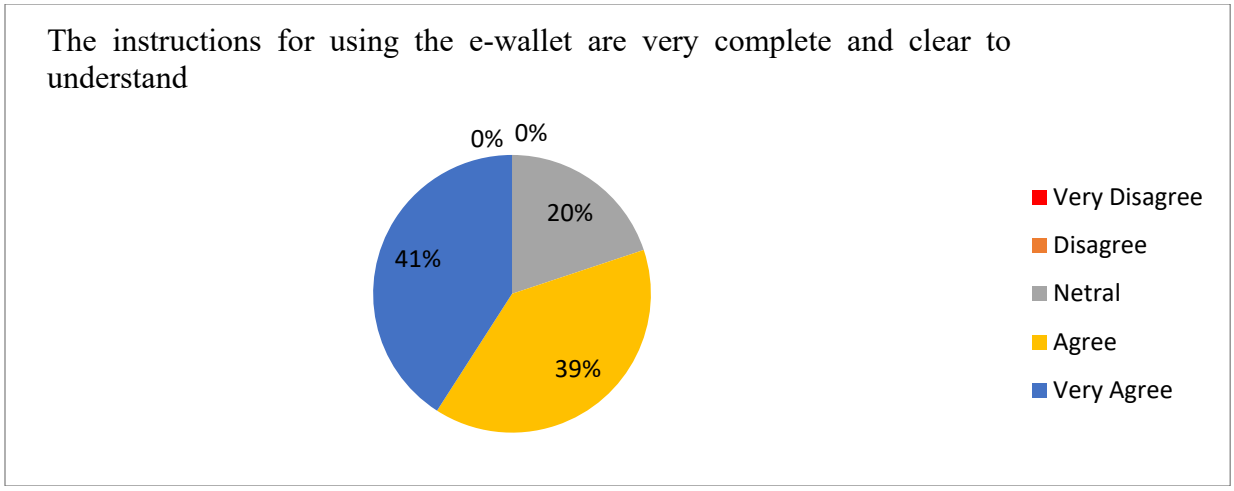


Figure 5. Result of Second Indicator of Perceived Ease of Use

Based on the survey results, around 80% of respondents agreed and strongly agreed that the instructions for using e-wallet in Indonesia are complete and clear and easy to understand. The survey results also stated that none of the research respondents disagreed that the instructions for using e-wallet made it difficult for users. This is one of the reasons why respondents find it easy to use e-wallet even though it is a disruptive innovation where the use of e-wallet technology is still relatively new in society, but users are easy to adapt and accept this technology because of the ease of use and clear instructions.

**4.3 Behavioral Intention To Use**

In addition to discussing the factors that support users using e-wallet, this study also discusses the behavioral intention of users to use e-wallet. The indicators used refer to previous research by (Davis, 1989) in using behavioral intention to use in TAM theory and research by (Jarvenpaa et al., 2000; Yang et al., 2015) regarding indicators of behavioral intention to use. The survey results show a comparison of respondents' interest in using e-wallet and cash transactions as follows:

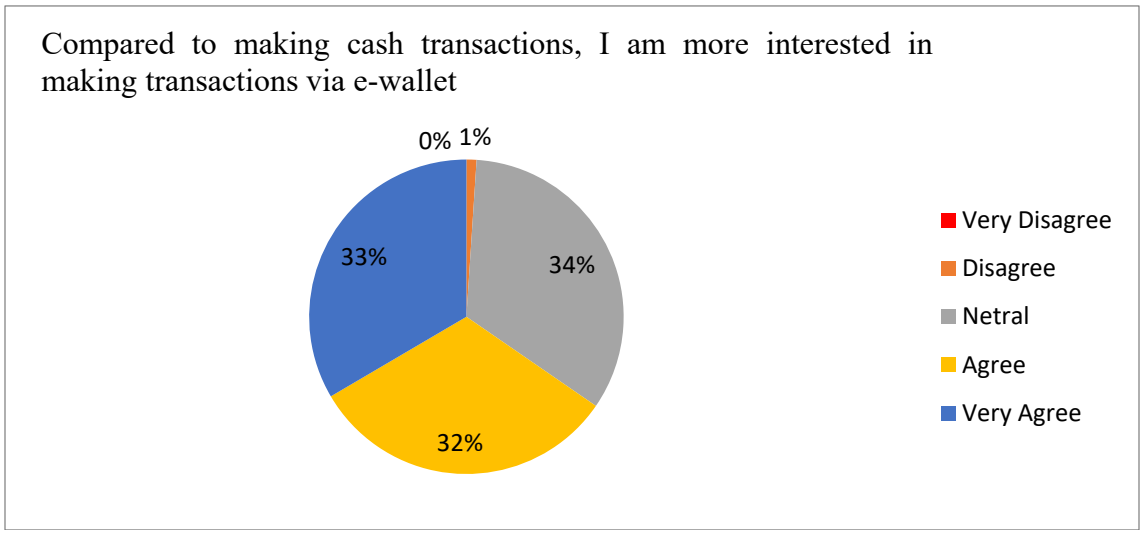


Figure 6. Result of First Indicator of Behavioral Intention to Use

Based on the survey results above, 569 respondents agreed and strongly agreed to use e-wallet more in conducting transactions than cash transactions. While the other 292 respondents answered neutral on the two choices. it is exhibits that 65% of the total respondents feel that e-wallet transactions are better than cash transactions. However, the results

of this survey also show that more respondents think they cannot decide to use e-wallet or cash transactions, this reason because many merchants and industries have changed the transaction process using electronic thus it makes easier for buyers to make transactions via e-mail. There are still many types of transactions that require someone to make transactions directly, especially in traditional markets. The survey results show the high interest of the Indonesian people to use e-wallet in conducting transactions. Even though respondents know that e-wallet technology has some risks that cash transactions do not have, respondents still choose to use e-wallet. This is as shown in the following survey results:

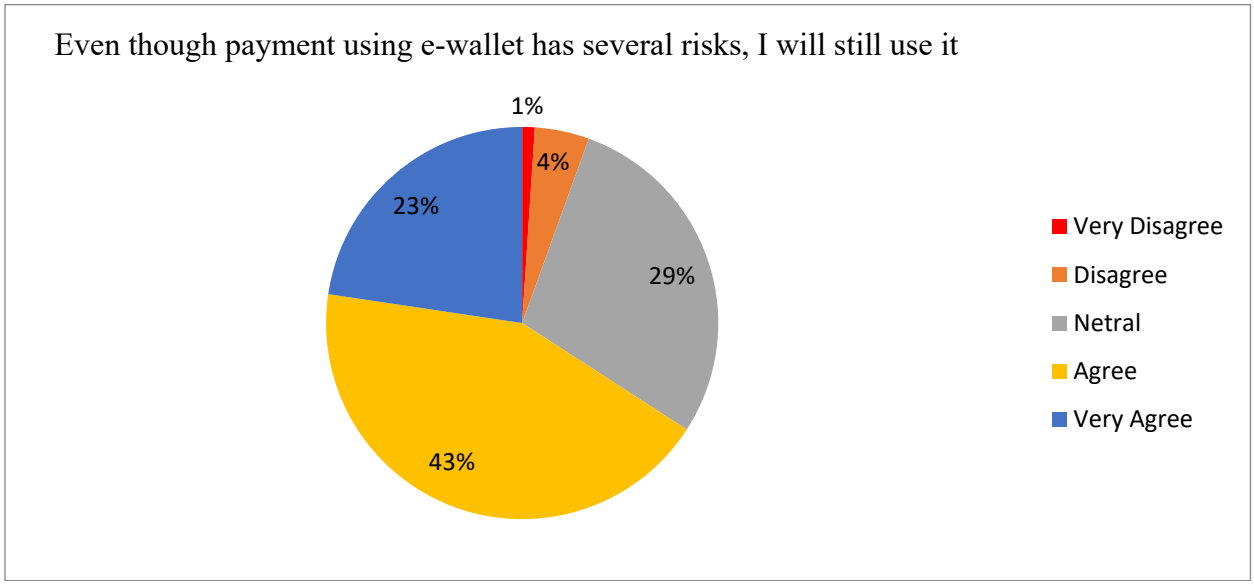


Figure 7. Result of Second Indicator of Behavioral Intention to Use

Based on the answers to the survey above, as many as 376 respondents said they strongly agree to continue using e-wallet even though respondents are aware that e-wallet technology has some risks and uncertainties such as the risk of transaction failure, the unstable internet connection that can interfere with the transaction process, cybercrimes, etc. It is shows the high interest and acceptance of e-wallet technology in Indonesia.

## 6. Conclusion

This study discusses the perception of the Indonesian people regarding the use of e-wallet in conducting transactions seen from the conceptual theory of technology acceptance model (TAM) by (Davis 1989). This survey indicates that the Indonesian people percived the benefits and conveniences of e-wallet technology in assisting the transaction process and show a high interest in using e-wallet by the public. In addition, this study explains that the technology acceptance strategy designed by e-wallet companies has been successfully implemented in Indonesia. This research can provide insight to many people that the Indonesian people have a great interest in new technology and can adapt quickly as long as the technology can positively impact its users. The novelty of this study is the current perception of technology users of e-wallet in Indonesia based on the conceptual theory of TAM through the online survey. For future research we suggest to do comprehensive analysis using other variables to complete this research results.

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