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The COVID-19 Pandemic as a Driving Force for E-Wallet Adoption in Indonesia

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Abstract

During the COVID-19 pandemic, e-payment systems, also known as cashless payment systems, have steadily evolved as a payment system instrument. Changes in payment methods, followed by a growth in digital payment systems, may be driving people to use e-wallets. The functions of an e-wallet are similar to those of an e-banking or mobile banking account, but an e-wallet gives greater convenience and simplicity of access while making payments. Because the use of e-wallets can help reduce the spread of COVID-19-causing coronaviruses, this study looks into the possibilities of increasing e-wallet usage while also increasing the use of digital payment and online transactions during the COVID-19 outbreak.

Keywords: e-wallet, e-payment system, pandemic, COVID-19, behavioural change

1. Introduction

Technological advancements have progressed to the point where humans may now carry out their daily routines with more ease and comfort. The evolution and advancement of technology has altered the way humans engage in daily activities and support business operations. Many core businesses have begun to evaluate how technology may help them run their day-to-day operations.

The internet revolution is another invention that serves as the foundation for all information technology revolutions. According to Leiner et al. (2009), the Internet transformed the computer and communications world in a unique way, giving past inventions such as the telephone, radio, television, and computer a new perspective. Computers, communication, entertainment, and other areas have all been transformed by the Internet. From the 1960s to the present, the Internet has evolved into a platform for successive digital revolutions (Turban, Pollard, & Wood, 2018). E-commerce, e-banking, and e-payment systems, such as mobile banking, e-cash, and, most recently, e-wallet payment systems, have all resulted from these digital revolutions (Rainer & Prince, 2019). E-wallet payment systems can be issued by banks or non-bank institutions. In Indonesia, an e-wallet can be issued as a card-based (chip-based) or application-based (server-based) (Dept of Legal of Bank Indonesia, 2009).

E-wallet payment systems, like mobile payment systems, have faced issues with their use since their inception. Several studies have been conducted to investigate issues such as these in the implementation of e-wallet payment systems. Issues such as consumer awareness, security, and trust deter customers from adopting mobile payments such as e-wallets (Stewart & Jürjens, 2018). According to several studies, the risk concern (perceived risk) that would occur will be the factor that hinders people from utilising technology (Munoz-Leiva, Climent-Climent, & Liébana-Cabanillas, 2017; Pei, Wang, Fan, & Zhang, 2015; Ryu, 2018). The user's perceived trust is also an issue (Chang, Wong, Lee, & Jeong, 2016; Kumar, Adlakaha, & Mukherjee, 2018; Stewart & Jürjens, 2018). Financial technology, mobile payment, and e-wallet are some of the subjects addressed in the studies.

Users of e-wallet payment systems account for over 30% of Indonesia's total population (We Are Social & Hootsuite, 2020; Kemp, 2021). The possible causes described in the preceding paragraph can be deemed to discourage potential users from using an e-wallet. However, considering that coronavirus may persist on the lifeless surface of solid objects (Kampf, Todt, Pfaender, & Steinmann, 2020), one of which being paper money and coins, the Covid-19 Pandemic is likely to change this behaviour. The focus of this research is to determine the extent to which e-wallet payment systems are used in Indonesia, as well as whether Pandemic Covid-19 will affect people's use of them.

2. The Evolution of the E-Wallet Payment System

Initially, transaction activities were limited to the Barter system (Boel, 2019), which was a bilateral exchange of commodities and services owned by both parties. Nonetheless, this approach came to be perceived as strict and inflexible over time. This barter system has limitations since one party must find the other party who needs the items being exchanged,

which is a laborious task that gets rigid.

The challenges that the Barter system had were later solved by the introduction of money. Money was created to make the process of exchanging goods and services more manageable than a barter system (Blakstad, Allen, Blakstad, & Allen, 2018). Until now, money consisted solely of coins and banknotes; even before that, gold was used as a means of exchange (Squareup.com, 2020). A traditional cash payment system is what this type of transaction is known as. In terms of the operationalization of human interactions, this discovery ushered in a new civilization for human life. Payment systems are the names given to these types of transactions.

Dahlberg (2006) defines payment as a transaction in which monies are moved directly or indirectly from the payer (buyer, sender of funds) to the recipient of the payment (seller, recipient of funds) through an intermediary. Payment instruments are used to complete transactions. This innovation proceeded with the establishment of a banking system as a government-approved intermediary for storing and borrowing money, exchanging foreign currency, and regulating the mode of payment made by the buyer to the seller (Boel, 2019), currently known as payment by bank.

2.1 E-Payment System Now and Then

Payment system innovations such as credit cards in the 1950s, automatic teller machines (ATMs) and debit cards in the 1980s, e-commerce in the 1990s, and electronic payment systems as a current innovation (Scardovi, 2017), which is included as a fintech innovation, emerged as the banking system and technological advancements progressed. Electronic credit cards, electronic currency, and electronic wallets are examples of electronic payment systems.

Credit card

Credit cards were first used in the United States in the early 1950s and were issued by Bank of America and Chase Manhattan (Wolters, 2000). A credit card has evolved from what was formerly known as a charge card. Even yet, the charge card is still present (Rampton, 2016). Credit cards are plastic cards issued by financial institutions that allow cardholders to borrow money to pay for goods and services. The cardholder is responsible for repaying the borrowed funds, plus interest, as well as any agreed-upon additional expenses, at the agreed-upon period (Bloomenthal, 2020). Diners Club is a historical credit card that has been used in the past.

The credit card was initially offered in Indonesia in the 1980s by Bank Duta, which partnered with Visa and Mastercard International (cermati.com, 2015). Bank Duta exclusively issued credit cards to its customers at the time. Unlike today, banks can give credit cards to anyone, whether or not they are customers. Credit cards were invented long before the internet, and transactions between cardholders, merchants, and financial institutions were settled using Batch Processing systems (Wolters, 2000). Credit cards existed and had a market share in terms of users until recently, and now they are supported by internet technology.

Debit Card

Following the advent of credit cards, the ATM (Automated Teller Machine) is the next banking technology that allows consumers to withdraw cash without having to see a bank teller. To withdraw money from an ATM, the user needs to have the necessary equipment, which can include a credit or debit card.

Debit cards were initially introduced in 1972, although they were not widely used until the 1990s (Swammy, Thompson, & Loh, 2019). A debit card is similar to a credit card in that it can be used to pay for products and services as well as withdraw cash from an ATM. However, because a debit card is directly linked to a checking or current account, consumers cannot use it for anything other than the current outstanding balance (Fontinelle, 2020).

Mobile Payment/E-Payment

When the Internet became the backbone for banking system technology and the retail industry, cellular payments and electronic payments began to emerge. Previously, we could make payments using credit and debit cards, which are part of the development of banking technology. Due to the utilisation of banking system technology between banks and other third parties, credit and debit cards can also be termed E-payments (Rainer & Prince, 2019). Internet banking, mobile banking, and e-money/e-wallet are examples of other electronic payments products/technologies that have emerged with internet technology (Alt, Beck, & Smits, 2018).

As Internet technology matured, Internet banking began to emerge. Banks have begun to offer customers alternatives to traditional banking (Martins, Oliveira, & Popovi, 2014). Through different shipping network platforms such as PC banking, Internet banking, and its network, Internet banking provides information or financial services to its consumers (Aboobucker & Bao, 2018). It provides a number of advantages over traditional banking, including 24-hour services, accessibility, and ubiquity. When internet banking can be accessed via cellphones, it is usually referred to as e-banking, online banking, and mobile banking (Martins et al., 2014).

E-money/e-wallet is the most recent e-payment system innovation. Non-bank institutions can issue e-wallet or e-money, but only banks can provide credit cards, debit cards, and e-banking services. In Indonesia, at least, this is regulated (Department of Legal of Bank Indonesia, 2009).

An e-wallet, also known as a digital wallet, can be used on a smartphone or a computer. Money is pulled from a bank account using a debit/credit card or online banking to pay people/merchants using the same wallet, giving the ease of a cashless payment method (Bagla & Sancheti, 2018). In Indonesia, chip/card-based e-wallets and application-based e-wallets are the two forms of e-money/e-wallets. Chip-based e-wallets are similar to credit cards or debit cards, but application-based e-wallets rely on smartphone apps to operate. Application-based e-wallets are sometimes referred to as server-based e-wallets in other literature.

In Indonesia, the growth of e-wallets arguably began when the government started to control their issuance and use. Bank Indonesia Regulation (Central Bank) Number: 11/12/PBI/2009 was issued to mark the day (Department of Legal of Bank Indonesia, 2009). This regulation was originally intended to apply to electronic money (non-cash money), but it now also applies to the issuance and usage of e-wallets. According to Bank Indonesia's data (www.bi.go.id, 2020a), there were 156 million e-money users (including e-wallets) as of January 2020.

All electronic payment methods, according to Dominic 2020, began with the world wide web or internet technology. Overall, if the internet didn't exist, no technology would begin with the letter "e." Even e-commerce developed after internet technology was established; e-commerce and e-banking evolved together until the Internet was eventually used on smartphones.

3. Covid-19 Pandemic as a DRIVING FORCE for E-Wallet Payment

The coronavirus that causes COVID-19 disease has rocked the world in early 2020. The virus was initially discovered and identified in December 2019 in Wuhan, Hubei Province, China, according to the World Health Organization (WHO). In January 2020, the World Health Organization declared the coronavirus as a new virus. On January 13, 2020, the World Health Organization (WHO) reported the first case of COVID-19 outside of China, in Thailand. Since then, the virus has spread around the world, prompting the World Health Organization to proclaim COVID-19 a pandemic on March 11, 2020 (World Health Organization, 2020b). This pandemic was then followed by updates from afflicted countries in order to stop the coronavirus chain from spreading. This can range from just restricting social activities on a broad scale in Indonesia to totally shutting down all social events and prohibiting all citizens from leaving their homes, a practise known as lockdown.

COVID-19, a member of the Coronavirus family that targets the human respiratory system, has spread to almost every country on the planet. COVID-19 was found in 221 nations as of September 27, 2021 (worldometer, 2021), with a total of 231,551,680 confirmed cases and 4,743,708 confirmed deaths (World Health Organization, 2021). In Indonesia, there were 4,208,013 positive confirmed cases and 141,467 confirmed deaths as of September 27, 2021 (World Health Organization, 2021). COVID 19 has spread throughout Indonesia's 34 provinces. The first confirmed case of COVID-19, according to COVID-19.go.id, happened on March 2, 2020. The Corona positive confirmed curve graph has been increasing steadily since then. On September 27, 2021, in total, 5,874,934,542 vaccines have been administered worldwide (World Health Organization, 2021), with 48,915,476 complete vaccines administered in Indonesia (Indonesia Covid-19 Task Force, 2021).

The COVID-19 pandemic is affecting people all over the world. This pandemic prompted changes in all parts of life, and people are gradually adapting to the "New Normal" that exists today. The most fundamental concern is all aspects of living a healthy lifestyle. The most important things are to wash hands with soap every time you leave the house, wear a mask every time you go outside, and maintain a social and physical distance from others (World Health Organization, 2020a).

3.1 Behaviour Change in Transaction Payment in Indonesia

People suddenly have to change the way they do activities because of the COVID-19 pandemic. After WHO confirmed the spread of this disease as a pandemic, many countries in the World stopped the activities of their citizens such as work, schools, retail, buying and selling activities, religious activities and the like. This policy is followed by other social/physical distance policies to force all citizens to stay at home.

Humans are forced to adapt quickly due to these changes so that economic activity can continue to run, along with social changes with everything done from home, such as continuing to work from home for employees who can indeed do work from home and school from home (Zwanka & Buff, 2020). As a result, video teleconferencing activities are booming, and work and school are then carried out using video teleconferencing media. These activities are, of course, assuming they already have a capable internet network because teleconferencing requires internet network support.

Another thing is the growth of online buying and selling activities; even before the pandemic, e-commerce has proliferated. This pandemic makes people purchase goods through online transactions. According to the Indonesian Ministry of Communication and Information, e-commerce transactions during the pandemic increased 30%, including telemedicine activities that began to be carried out by many people (Rizal, 2020). Purchases of primary needs are even made online during this pandemic.

The rise of online shopping is clearly changing the way people pay for things. Since the Covid-19 case was confirmed in Indonesia in March 2020, the number of e-money users has increased significantly from 156 million to 206 million (www.bi.go.id, 2020a). Since the pandemic began a year ago, in April 2021, the amount of e-money utilised has climbed by about 135 percent to 483 million (www.bi.go.id, 2021), despite the fact that the outbreak has not yet ended. People movement restrictions such as “Large Scale Social Restriction Policy” by Province, which was considered red zones such as DKI Jakarta, West Java and East Java Province in 2020, and “Enforcement of Restrictions on Community Activities” in Jakarta and other areas on Java Island in 2021 followed this confirmed case (Permatasari, 2021). As a result of this approach, there was very little human movement. Offices, schools, shopping malls, and places of worship are all closed, and residents are unable to go outside of the city. As a result, there has been a growth in online buying and digital payments. It can be seen in Figure 1 that there was a significant increase in e-money transactions from March to April 2020, from around IDR 15 trillion to IDR 17.5 trillion (www.bi.go.id, 2020b).

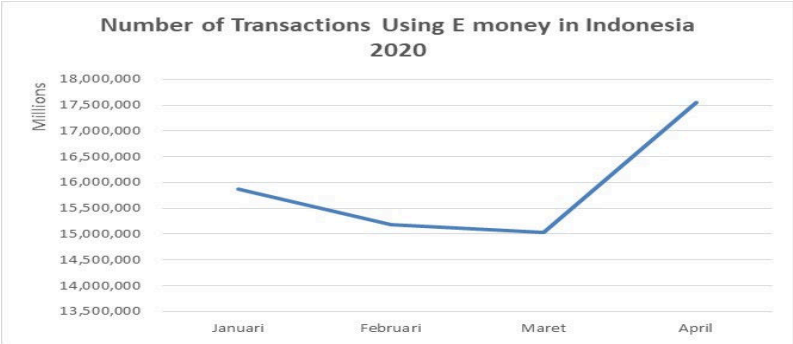

Figure 1. Number of transaction using e-money in Indonesia 2020

source: http://www.bi.go.id

Indonesia has supported the national non-cash movement, which was begun in 2014 by Bank Indonesia as the country's central bank and was later strengthened by the Republic of Indonesia's Presidential Regulation No.82 of 2016 on the National Strategy for Inclusive Finance. During the Pandemic, Bank Indonesia published new press releases encouraging people to use non-cash payment methods (Communication Dept. Bank Indonesia, 2020).

In the COVID-19 pandemic, changes to payment systems must be accompanied by a rise in the use of digital payment systems. It is reasonable to employ digital payment systems instead of traditional cash payments due to the pandemic condition (Roggeveen & Sethuraman, 2020). Cash payments have always required coins and banknotes; even digital payments such as credit cards and debit cards require users to touch and/or possess media such as cards and ATMs. Users do not need to touch or hold anything other than their smartphone when utilising an application-based e-wallet installed on their smartphone. Payment can be performed by scanning a QR code or entering the PIN into the e-wallet app on the phone. The advice given by individuals involved is to attempt to avoid handling or holding unclean items as much as possible. Hands must be washed as quickly as possible if forced to contact or hold something. Coronavirus can persist on the inert surface of solid items for up to 9 days, according to research conducted by Kampf et al. (2020); in this scenario, banknotes, coins, credit cards, and ATM cards are considered as solid things.

In conclusion, the usage of digital payments, particularly e-wallets, can aid in the prevention of the spread of COVID-19-causing coronaviruses. Although the characteristics of an e-wallet are similar to those of an e-banking/mobile banking account, an e-wallet gives more convenience and simplicity of access when conducting financial transactions. In Indonesia, e-wallets may be used to pay for things like electricity, telephones, and the Internet, as well as make marketplace payments (which can also be done with e-banking). They can also be used to pay for things at retail outlets such as restaurants, supermarkets, and department stores, as well as parking tickets. It is undoubtedly a superior feature compared to banking products such as e-banking and mobile banking (Bagla & Sancheti, 2018).

3.2 E-wallet Payment System Acceptance

In order to support the growth of e-wallet usage, the readiness and maintenance of the e-wallet application system must be in place. As previously known, there was a significant increase in the use of e-wallets during the pandemic. So, this phenomenon is not just a momentary trend; it requires the readiness of stakeholders regarding the use of e-wallet. This section will next summarise what we need to prepare and maintain in order to continue using e-wallets. This can be accomplished by reviewing previous studies on the factors that influence the intention to use/usage of e-wallets and/or other e-payment technologies. It will obtain information from that summary about what to prepare when using e-wallet payment systems. The research to be summarised is about user acceptance and factor determination in e-wallet and other types of e-payment systems.

Prior research on factors influencing user acceptance of new technology has mostly relied on the Technology Acceptance Model (TAM) (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003) as fundamental theories.

Table 1 contains a comprehensive review of prior studies on e-wallet adoption. The factors that stakeholders must consider when operating an e-wallet are summarised.

Table 1. Prior studies on e-wallet acceptance

No	Author	Title	Significant Variables
1	(Kumar et al., 2018)	The Effect of Perceived Security and Grievance Redressal on Continuance Intention to Use M-Wallet in Developing Countries	• Perceived usefulness. • Perceived ease of use • Perceived security • Grievance redresses
2	(Bagla & Sancheti, 2018)	Gaps in customer satisfaction with digital wallets: a challenge for sustainability	• Perceived usefulness. • Perceived ease of use • Perceived security
3	(Li, Wang, Wangh, & Zhou, 2019)	Mobile Payment with Alipay: An Application of Extended Technology Acceptance Model	• Perceived usefulness. • Perceived ease of use
4	(Kowang, Aziz, Hee, Fei, & Yew, 2020)	E-Wallet Acceptance among Undergraduates in Malaysia	• Perceived ease of use
5	(Kavitha & Kannan, 2020)	Factors Influencing Consumers Attitude Towards Mobile Payment Applications	• Perceived usefulness. • Perceived ease of use • Perceived Risk
6	(Jin, Seong, & Khin, 2020)	Consumers' Behavioral Intention to Accept of the Mobile Wallet in Malaysia	• Perceived usefulness. • Perceived ease of use • Social influence • Brand image
7	(Azizah, Handayani, & Azzahro, 2018)	Factors Influencing Continuance Usage of Mobile Wallets in Indonesia	• Trust • Satisfaction
8	(Shin, 2009)	Toward an Understanding of the Consumer Acceptance of Mobile Wallet	• Perceived usefulness • Perceived ease of use • Perceived Security • Trust • Attitude toward using technology
9	(Amoroso & Magnier-Watanabe, 2012)	Building A Research Model for Mobile Wallet Consumer Adoption: The Case of Mobile Suica, Japan	• Perceived usefulness • Perceived ease of use • Facilitating condition • Perceived security/privacy • Trust • Perceived risk
10	(Soodan & Rana, 2020)	Modelling Customers' Intention to Use E-Wallet in a Developing Nation: Extending UTAUT2 With Security, Privacy and Savings	• Perceived security • Facilitating condition • Performance expectancy
11	(Malik, Suresh, & Sharma, 2019)	An Empirical Study of Factors Influencing Consumers' Attitude Towards Adoption of Wallet Apps	• Performance expectancy • Trust
12	(Widodo, Irawan, & Sukmono, 2019)	Extending UTAUT2 to Explore Digital Wallet Adoption in Indonesia	• Performance expectancy • Trust • Facilitating conditions
13	(Nabila et al., 2018)	Financial Technology Acceptance Factors of Electronic Wallet and Digital Cash in Indonesia	• Effort expectancy • Performance expectancy

3.3 Key Indicators to E-Wallet Acceptance

Usefulness

When using the e-wallet payment system, users must be able to see and feel its usefulness.

The independent variables, perceived usefulness and performance expectancy, in TAM and UTAUT theory, reflect usefulness. Perceived usefulness is the degree to which a person believes that using a specific system will improve their performance (Davis, 1989), whereas performance expectancy is the degree to which a person believes that using the system will help him gain a competitive advantage in performance (Venkatesh et al., 2003). According to other research, usefulness is the extent to which an innovation is considered better than its predecessor (Moore & Benbasat, 1991). It could be argued that the usefulness of using an e-wallet payment system is when users feel better off after using it, and that some benefits can be obtained from its use. The advantages of an e-wallet are already apparent; it can perform almost all payment transactions as well as some banking transactions such as wire transfers.

Ease of Use

Ease of use refers to how users find it easy and require little effort only when using the e-wallet application for the first time. Ease of use is reflected in TAM and UTAUT theory by perceived ease of use and effort expectancy. Effort expectancy is the degree of ease associated with using the system (Venkatesh et al., 2003), whereas perceived ease of use is the degree to which a person believes that using a system would be free of effort (Davis, 1989). It is possible to say that ease of use in using an e-wallet payment system is when users believe it will be simple to use and operate for the first time and thereafter. E-wallet payment vendors must create an e-wallet application that requires no effort to learn how to use it.

Facility Readiness

The term “facility readiness” refers to how users discover that all of the resources required to use an e-wallet, such as smartphones and internet connections, are already available. According to UTAUT theory, facility readiness is reflected in the facilitating condition, which is defined as the degree to which one believes that the organisational and technical infrastructure exists to support the system (Ajzen, 1991). In the case of e-wallet use, the most important supporting system is the Internet network of the GSM provider and/or Internet service provider; this service provider must maintain good service unless the user switches to another ISP that has good service.

Security

The security of e-wallet payment is safe and free of the risk of a personal data breach, transaction data breach, and embezzlement of user balances in the e-wallet. Because fraud occurs on the internet network, security relating to computer-based information systems frequently refers to cybersecurity (Turban et al., 2018). In TAM research, security is frequently reflected as a user perception; this may be referred to as perceived security. It is defined as the implementation of measures to prevent fraudulent activities that cause customer distrust (Vaithilingam, Nair, & Guru, 2013). Therefore, good security will improve user trust in using the e-wallet payment system. Others define it as a user’s perception of the security risk associated with e-wallet use (Kumar et al., 2018). E-wallet providers must ensure that e-wallet application security is in place to prevent fraudulent activities by third

parties.

Risk

Romney and Steinbart (2018) define risk as the probability that a threat or hazard will occur. Personal data breach, transaction data breach, and embezzlement of a user's balance in their e-wallet are examples of threats that may occur when using e-wallet payment. In studies on user acceptance of e-payment/e-wallets, risk is reflected as a user's perception of risk, known as perceived risk. It is defined as the consumer's subjective expectation of suffering a loss in pursuit of the desired outcome (Kim, Ferrin, & Rao, 2008; Wang, Wang, Lin, & Tang, 2003). To reduce the risk that users will face, vendors must implement adequate security to prevent all risks from occurring. PIN, password, token, and one-time PIN/password linked to the user's phone number are examples of this type of security.

Trust

In terms of e-wallet usage, trust refers to the ability to enable secure and reliable data communication in e-wallet transactions and such (Turban et al., 2018). In studies on e-wallet user acceptance, trust refers to the perception of users, which is termed "perceived trust". It is defined as the accumulation of customer beliefs of integrity, benevolence, and ability that could increase customer willingness to rely on technology (Gefen, Karahanna, & Straub, 2003), as well as building customer confidence in using a specific technology or innovation (Vaithilingam et al., 2013). The user's trust in using an e-wallet is typically influenced by a number of factors, including testimonials from other users found in the Google Play store when the application is downloaded on a smartphone, previous experience with similar applications, the credibility of application vendors, and the belief that certain applications are secure due to security mechanisms that have been implemented.

3.4 The Relationship Between Security, Risk and Trust

Previous works of literature demonstrate the existence of relationships between security, risk, and trust. Table 2 depicts the relationship discovered in previous literature regarding user acceptance/adoption of new technology such as internet banking, m-payment, e-payment, and others.

Table 2. Relationships between security, risk and trust

No	Relationship	Literature by
1	Adequate security will increase user Trust	(Stewart & Jürjens, 2018), (Vaithilingam et al., 2013), (Kumar et al., 2018)
2	Minimum risk will increase user Trust	(Damghanian, Zarei, & Siahsarani Kojuri, 2016), (Amoroso & Magnier-Watanabe, 2012), (Aboobucker & Bao, 2018), (Liébana-Cabanillas, Sánchez-Fernández, & Muñoz-Leiva, 2014)
3	Adequate security will minimize Risk	(Damghanian et al., 2016), (Amoroso & Magnier-Watanabe, 2012)
4	Risk has a negative effect on perceived security	(Johnson, Kiser, Washington, & Torres, 2018)
5	Trust has a negative effect on risk	D. J. Kim, Ferrin, & Rao, 2008), (Muñoz-Leiva, Climent-Climent, & Liébana-Cabanillas, 2017), (Marriott & Williams, 2018)

4. Conclusion

Consumerism is becoming more prevalent as we progress. The consumption economy has become an important part of many people's lives because of online shopping, mobile payments, and the Internet. However, how does this vast marketplace impact the economy? One of the most common questions that consumers have is whether they should switch to electronic payments such as e-wallets. The advantages of digital payments are numerous, as they can help us move toward a cashless society, allowing businesses to grow alongside them. The E-wallet payment system is a significant advancement in payment systems that make use of the Internet and smartphone technology. Previous payment systems such as credit cards, debit cards, internet banking, and mobile banking gave birth to the E-wallet payment system.

The purpose of this study is to determine the extent to which e-wallet payment systems in Indonesia are used and whether Covid-19 pandemic will potentially change people's behaviour in using them. The previous discussion mentioned a significant increase in e-wallet payment system usage from March 2020 to April 2021. This is most likely due to the large number of people who began using online payment transactions, particularly e-wallet payments, during the start of the COVID-19 pandemic, given the government's large-scale social restrictions policy and suggestion to stay at home. The COVID-19 pandemic shifted people's purchasing and selling habits from traditional to online. During this pandemic, the government, as a regulator, encourages society to use non-cash payment methods. As a result, the pandemic is an excellent driving force to use digital payments.

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