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**| RESEARCH ARTICLE**

## **The Impact of COVID-19 Pandemic on Consumer Usage Intention of Electronic Wallets in the Philippines**

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**| ABSTRACT**

Digital wallets have revolutionized consumers' shopping experience by giving another convenient money transfer option. The adoption of electronic wallets (e-wallets) is significantly and positively affected by customer perception of electronic payment transactions. This paper attempts to study and examine the consumers' perception of using e-wallets in the National Capital Region during the peak of COVID-19 using the technology acceptance model (TAM) and unified theory of acceptance and use of technology (UTAUT) model. The present study examines consumers' level of trust, security, ease of use, and usefulness and then investigates the relationship to consumers' perception of e-wallets usage. The study employed a quantitative design using a descriptive-correlational research approach to assess the relationship between variables. The purposive sampling method was used to select the 201 respondents. The results revealed that consumers who perceived online trust, security, ease of use, and usefulness are more likely to use e-wallets during the pandemic. Practical managerial implications are addressed for enhancing digital transactions to increase consumer trust and security in online commerce.

**| KEYWORDS**

Electronic wallets, trust, security, ease of use, usefulness, consumer usage, COVID-19

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### **1. Introduction**

The Philippines is ranked 59th out of the 79 countries when it comes to digital transformation according to the 2020 Global Connectivity Index, suggesting that the country is a "starter" in adapting to digitalization (Balinbin, 2021). Despite the fact that the country is increasingly embracing online shopping, customers still prefer to pay cash on delivery. However, the online shopping experience was disrupted in 2020. The COVID-19 pandemic has accelerated the trend of cashless payment through electronic and digital systems, which has contributed to exponential growth in e-commerce. With the advancement of technology, consumers were exposed to new digital alternatives to cash, which radically influenced the local and international payment systems, preeminently with the COVID-19 pandemic. Electronic payment refers to a system that produces transactions over the internet or through an electronic medium when cash or any printed media is absent. As an effect, the use of e-wallets in the Philippines has increased.

Before the pandemic emerged globally, it was reported that most Filipinos frequently relied on the traditional means of conducting financial transactions, which is through cash and cheque payments (Ching, 2017). This similar behavior is highly exhibited in numerous Asian countries such as China, India, Singapore, and Malaysia. As an adverse effect, a population's lack of utilization of e-wallets in the preceding years has possibly heightened the users' privacy and security concerns (Sahi et al., 2022). These concerns are primarily due to the confidential data required by a digital medium, which includes a respective consumer's phone numbers, social security numbers, pin code, and other necessary details to be recorded depending on the transaction that occurred (Featherman & Pavlou, 2003). In addition, the possibility of the data being acquired illegally using those identified by Jung & Jang (2014), such as viruses, phishing, pharming, transaction poisoning, and spamming, among others.

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Perception is a necessary psychological factor that affects an individual's purchasing decisions (Cozer, 2018). It refers to the procedures on how various customers would differently realize and comprehend the environmental stimuli based on the matter it has seen, tasted, heard, or touched. A component of the TAM states that two impressions are influenced by an external variable related to the user's self-efficacy and first-hand experience with the system. The other is perceived usefulness, which refers to the person's insight on how the technology would enhance his/her actions when performing a task. The user's perceived ease of use, or the other perception, expresses how the user feels about the effort required to utilize the system (Olushola and Abiola, 2017). To investigate the relevance of trust, security, ease of use, and usefulness in consumers' perception of using e-wallets, the authors used a portion of the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT) model, and certain conceptual frameworks associated with the first two models with regard to e-wallets in order to ascertain consumer behavior.

Based on Wang et al. (2003), the perceived ease of use is assumed to be the basis of perceived usefulness. In addition, the latter extended the TAM by adding credibility, denoting the user's privacy and security matters in the context of technology usage. Thus, the studies of Davis (1989) and Wang et al. (2003) indicate that the three perceptions influence the behavioral intention of the individual in using technology. The theory created by Davis (1989) was expounded further by Venkatesh et al. (2003) in developing the Unified Theory of Acceptance and Use of Technology (UTAUT) model. This model highlights the crucial points in forecasting the behavioral intention in utilizing technology from the consumer's perspective. According to this theoretical paradigm, behavioral intention determines how technology is actually used. The direct impact of four main dimensions, including performance expectancy, effort expectancy, social influence, and enabling factors, determines the anticipated likelihood of adopting the technology. Apart from the perceived ease of use and perceived usefulness, the authors added the perceived online trust as an essential element in availing of technological services since it also influences the behavioral intention of the individual in using technology Yang et al. (2021), thus, aiding service providers in assembling a stable customer relationship (Singh and Sinha, 2020).

Based on the extant literature review, the present study will first attempt to determine consumers' level of trust, security, ease of use, and usefulness and then examine its association as to how these consumers can affect perceptions of using e-wallets despite the pandemic challenges. Furthermore, if these consumers change their perception of using e-wallets with the advent of the pandemic, then the variables examined need to be better understood and improved. This study is structured as follows. First, the authors examine the acceptance and adoption intention of e-wallets based on theories that stem from various fields. Second, the present study explores the role of trust, security, ease of use, and usefulness in explaining customers' intention to use e-wallet platforms. Third, conducting correlation analysis to investigate if trust, security, ease of use, and usefulness have an association with consumers' intention to use e-wallets. The last part will discuss the implications of findings for theory and practices, present the conclusion, and provide recommendations for future research.

## **2. Literature Review**

### **2.1 Relationship of Trust to Consumer Perception of Electronic Wallets**

Trust is a factor that directly affects consumers' intent to use (Gefen et al., 2003) and is considered an essential factor in any business-related transaction. This is because virtual interactions limit consumers from checking their trustworthiness as they normally would in face-to-face transactions (Reichheld & Schefter, 2000). Therefore, if consumers lack trust, they will choose not to patronize the business. Supplementarily, according to Muir and Moray (2007), trust is based primarily on consumers' perception of automated systems' capabilities. Therefore, the more trust the consumer has, the more they perceive the automated system positively. Perceived trustworthiness, benevolence, and integrity toward mobile banking systems have an important role in developing consumers' attitudes toward its use (Lin, 2011). Therefore, automated systems providers develop trust with consumers to increase business opportunities (Gefen et al., 2003). However, operating entirely online brings a higher risk to both the proprietor and customers compared to traditional businesses (Nookhao & Chaveesuk, 2019). With the COVID-19 pandemic forcing businesses to digitalize, it became crucial for enterprises to earn consumers' trust for them to begin and continue patronizing the business. Thus, the authors expect to see a similar finding, and therefore, the following hypothesis is presented:

*H1. Trust has a positive effect on consumers' perception of electronic wallets.*

### **2.2 Relationship of Security to Consumer Perception of Electronic Wallets**

Digital wallets have played an important role in implementing safety and generated a notable mark in terms of businesses operating in the online industry. This is because, unlike traditional payments, e-wallets decrease the amount of paperwork, labor, and time consumed when electronic transactions are concerned (Delorit, 2021). Consumer preferences shifted away from traditional payment methods and toward digital payment methods such as e-wallets because of the pandemic, which led potential customers to learn about digitalization services. However, when the usage of e-wallets is concerned, the findings of Aydin & Burnaz (2016) have generalized that users have lower levels of security concerns, reflecting a favorable perception in terms of mobile wallet security. This has signified those users overcame the two e-wallet security concerns that may occur, as mentioned above.

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Users of mobile phones expressed tremendous worry about the security of mobile payment transactions and the unlawful usage of mobile phones to make payments. Consumers' top worries about digital payment options were security and privacy (Dahlberg et al., 2003). In the advent of the COVID-19, Undale et al. (2020) and other international studies regarding the consumer's perceived security on e-wallets during the coronavirus surge are already existent. According to Singh S. and Rana R. (2017), digital transactions using applications led to behavioral changes and helped with the adoption of digital payment. Moreover, with the pandemic forcing individuals to lessen physical contact, people began to adapt to the changes brought by the pandemic, leading to the use of e-wallets. Thus, this notion allows this study to frame the second hypothesis as follows:

*H2: Security has a positive effect on consumers' perception of electronic wallets.*

### **2.3 Relationship of Ease of Use to Consumer Perception of Electronic Wallets**

The rising demand for non-cash payment systems during the COVID-19 pandemic has shifted consumer attitudes toward using e-wallets, and the advances being made may significantly alter the dynamics of e-wallet acceptance (Shekhar et al., 2020). However, according to Ates (2019), since e-wallets involve personal information such as credit card numbers and account balances, many consumers are still skeptical of their reliability. Moreover, despite the weakening of economic activity caused by social restrictions, the public's use of digital payments has grown. This changed people's transaction preferences from cash to non-cash (Musyaffi et al., 2021). The digital payment method was designed to make it easier for users to conduct financial transactions using technology (Venkatesh et al., 2012). Consumers prefer to perform activities that take less time to complete because they organize their activities in chronological order according to their preferences to facilitate their transactions (Nag & Gilitwala, 2019). Prior research has also shown that perceived ease of use can have an indirect effect on the persistence of the intention to use. This means that when a person realizes that learning new mobile technology requires only a few resources, he or she may perceive the technology as easy to use, leading to continued use (Humbani & Wiese, 2019). Drawing upon these reports and works of literature, the author postulate that:

*H3: Ease of use has a positive effect on consumers' perception of electronic wallets.*

### **2.4 Relationship of Usefulness to Consumer Perception of Electronic Wallets**

Adoption of a digital wallet as a payment mechanism is influenced by characteristics such as perceived ease of use, expressiveness, and trust. These elements are known as facilitators, and they play an important role in the adoption of digital payment solutions (Padashetty & Kishore, 2013). In the context of mobile payments, Shen & Ziderman (2008) evaluated a comprehensive model of customer acceptability. It employed the UTAUT paradigm, which included dimensions including security, trust, social influence, and self-efficacy. The results demonstrated that users' attitudes and intentions are impacted by perceived security and trust. Shoppers benefit from digital wallet payments since they allow for customizable payment options and faster exchanges (Liu et al., 2012). The e-commerce industry in the Philippines has been innovated with a wide range of different payment methods such as online banking, e-wallet services, and cash-on-deliveries. To fulfill the pandemic's limits, people had to adopt new habits in their regular routines, and these changes in human behavior may last long after the pandemic is over. The emergence of online shopping platforms such as Lazada, Shopee, and Zalora, which are e-commerce heavyweights, has led to the rise of e-payment, and online transactions are becoming more common. Users will be able to pay and manage their bills via e-payment in a simple and timely manner, especially during the pandemic. Thus, the researchers arrived at the following hypothesis:

*H4: Usefulness has a positive effect on consumers' perception of electronic wallets.*

Based on the justifications and supporting works of literature highlighted above, the research model for this study is presented in Figure 1.

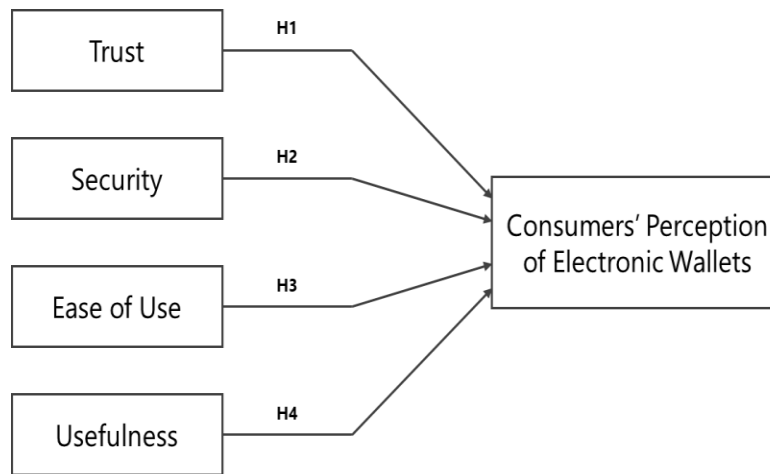


Figure 1. Proposed Research Model

Furthermore, because no research on this topic has been done in the Philippines and the electronic payment services available to this country, the current study will fill the research gap on how online trust, security, ease of use, and usefulness affect the perception of consumers in using e-wallets during the pandemic. In addition, the study contributes to the body of knowledge outside of Western countries by examining consumer psychology and technology acceptance model and usage intent, which relies on findings from a range of fields and gives a unique consumer behavior setting to investigate.

### 3. Methodology

#### 3.1 Research Design

This paper utilized a quantitative study using a descriptive-correlational design to assess the links between trust, security, ease of use, and usefulness with consumers' perception of e-wallets. The authors used the Extended Technology Acceptance Model (Wang et al., 2003) and Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003) as the primary tool to establish the conceptual associations among the various identified variables in the study. Furthermore, this cross-sectional study is observational and is referred to as descriptive research because it evaluates the outcome and observation of study participants at the same time rather than the cause of something.

#### 3.2 Participants of the Study

The researchers used purposive sampling in choosing the respondents for this study. Purposive sampling is a technique where the participants are selected based on their characteristics and the objectives of the study (Crossman, 2020). The data gathering started in April and ended in May 2022. The participants were online shoppers ranging in age from 25 to 40 years old, belonging to the Millennial generation, and living in the National Capital Region, because it holds the highest share of online shoppers in the country. A total of 229 questionnaires were distributed to the target respondents, and only 201 valid responses completed the online survey resulting in a response rate of 88%.

#### 3.3 Research Instruments

Questionnaires were used to gather data in this study, and they were divided into three components. The first part details the demographic characteristics of the participants, including sex, age, employment classification, monthly income, and e-wallet user status. The second part details the items for each variable. There were four (4) items for trust, five (5) items for security, four (4) items for ease of use, five (5) items for usefulness, and six (6) items for consumers' perceptions of e-wallets. A self-structured questionnaire was examined with several items utilizing a five-point Likert scale based on variables from prior work relevant to technology acceptance. The scale ranges from (5) strongly agree to (1) strongly disagree. Questionnaires were drawn from Nookhao & Chaveesuk (2019) to measure trust, security was adapted from Aydin & Burnaz (2016), ease of use was designed from Ho Chi Minh City by Vy (2019), and usefulness was adapted from Chawla & Joshi (2019). As for the consumers' perception of e-wallets, the items were taken from Singh & Rana (2017).

Cronbach's coefficient alphas for each dimension were used to assess the internal consistency reliability of the instruments used in the study. Table 1 explains the values for each variable. To exhibit strong reliability, Cronbach's Alpha must be equal to or greater than 0.70 (Fornell & Larcker, 1981). The table shows that the variables trust, security, ease of use, usefulness, and consumers' perception of e-wallets satisfied the criterion for the reliability test.

Table 1. Reliability Test Result

Constructs	No. of Items	Cronbach Alpha
Trust	4	0.781
Security	5	0.853
Ease of Use	4	0.920
Usefulness	5	0.945
Consumers' Perception of E-Wallets	6	0.859

Note. Frequency (N = 221)

### 3.4 Statistical Treatment

The researchers used Statistical Package for the Social Sciences Version 26 to perform the following statistical treatments: descriptive statistics, Cronbach alpha, normality test, and correlation. This is used to simply analyze and determine the different objectives stated in the study. The data gathered will be processed using tables to add transparency to the data presented. Through these figures, the consistency and accuracy of the findings would be guaranteed.

## 4. Results and Discussion

### 4.1 Descriptive Statistics

As depicted in Table 2, the results show that majority of online shoppers that participated in the survey are female in their early 25 and educated or have a college degree. In addition, most of the participants spent an average of an hour per day browsing online sites and are regular users of electronic payments.

Table 2. Demographic Profile Result

Respondents Profile	Frequency	Percentage
Share of the female consumer	113	66.2%
The average age of consumers	136	66.7%
Share of consumers who finished tertiary education	144	71.6%
The average browsing time spent per day	5 hours	59.2%
Share of electronic payment usage rate	114	56.7%

Note. Frequency (N = 221)

Descriptive statistics of means and standard deviations were obtained from all variables. The descriptive statistics are summarized in Table 3. The data showed that trust and security get similar weight value with a verbal interpretation of "Agree", while ease of use and usefulness resulted in "Strongly Agree" bearing the highest among the independent variables. On the other hand, consumers' perception of e-wallets gets an overall mean score of 4.258 with a verbal interpretation of "Strongly Agree".

Table 3. Overall Descriptive Statistics of the Variables

	N	Mean	Standard Deviation	Interpretation
Trust	201	4.182	0.661	High
Security	201	3.586	0.861	High
Ease of Use	201	4.501	0.627	Very High
Usefulness	201	4.619	0.614	Very High
Consumers' Perception of E-Wallets	201	4.258	0.647	Very High

Verbal Interpretation: Very Low – 1.00 to 1.80; Low – 1.81 to 2.60; Moderate – 2.61 to 3.40; High – 3.41 to 4.20; and Very High – 4.21 to 5.00.

The values for the five variables must first be determined to see if they are regularly distributed. Since the sample size is relatively small, the researchers test the normality to determine the most appropriate measure of relationship to be used in this study. The

test of normality considered in this study is the Shapiro-Wilk since it is more powerful given the small sample size used. Table 4 indicates that one of the variables is significantly different from the normal distribution ( $p < .05$ ). This means that the most appropriate test of relationship to use is the non-parametric Spearman's rho.

Table 4. Test of Normality

Items	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Trust	0.155	201	0.000	0.896	201	0.000
Security	0.100	201	0.089	0.958	201	0.022
Ease of Use	0.304	201	0.000	0.695	201	0.000
Usefulness	0.358	201	0.000	0.651	201	0.000
Consumers' Perception of E-Wallets	0.128	201	0.007	0.906	201	0.000

a. Lilliefors Significance Correction

#### 4.2 Relationship of Trust, Security, Ease of Use, and Usefulness to Consumers' Perception towards E-Wallet

The main objective of this research was to determine the change in consumers in the Philippines' perception of e-wallets considering the trust, security, ease of use, and usefulness factors with the advent of the COVID-19 pandemic. To test the relationship of the identified variables to consumers' perception of e-wallets, a correlation analysis was done. Since the normality test showed that the variables are assumed to be non-normally distributed with all values being less than 0.05, the nonparametric Spearman-Rho correlation was used. Table 5. shows the correlation data between consumers' perception of e-wallets and trust, security, ease of use, and usefulness factors. Analysis of the data revealed that consumers' perception of e-wallets correlated with all four identified variables. Not only was there a relationship between the variables, but a strong one, as indicated by the two asterisks along with its correlation coefficient. The correlation coefficients were also positive, indicating that as the levels of the identified variables increase for a consumer, the more positive their perception is of e-wallets. Thus, H1, H2, H3, and H4 are supported.

Table 5. Relationship of Sustainable Human Resource Management and Intention to Stay

	Trust	Security	Ease of Use	Usefulness
<b>Consumers' Perception of E-wallets</b>				
Spearman Rho Correlation	0.585**	0.528**	0.577**	0.643**
Sig. (2-tailed)	0.000	0.000	0.000	0.000

Note. \*\*Correlation is significant at the 0.01 level (2-tailed). N = 201

The results show that consumers' perception of e-wallets has a strong and positive relationship with trust, security, ease of use, and usefulness factors. These findings are both supported and in contrast with other literature. For one, the study of Nag and Gilitwala (2019) shows that there is a significant relationship between trust, security, ease of use, usefulness, and intention to use electronic payment services. Similarly, a study by Alswaigh & Aloud (2021) shows that trust, security, ease of use, and usefulness has a positive and significant relationship with consumers' attitude toward e-wallets. In addition, a study by Nookhao and Chaveesuk (2019) shows that trust has a positive relationship with consumers' intention to use e-wallets. E-wallet service providers must create satisfaction that is equal to or higher than the expectations of users to earn their trust. Apart from that, a study by Shaw (2014) shows that trust and perceived usefulness positively influence consumers' intention to use e-wallet services. In addition, coupled with their familiarity with mobile phones and the gradual introduction of e-wallet service systems into the economy, consumers were assured that e-wallet services could be trusted. Furthermore, for usefulness, it was due to e-wallet services' faster transactions and the convenience of receiving e-coupons and digital receipts. However, his study also finds that perceived ease of use does not directly influence consumers' intention to use e-wallet services. This is supported by the study of Daragmeh et al. (2021). One possible reason for this is the respondents were already familiar and experienced with mobile transactions. Therefore, making ease of use an insignificant factor to consider for them. The integrity of e-wallet systems to provide protected and transparent transactions greatly contribute to the consumers' perceived trust, security, ease of use, and usefulness. These perceptions greatly impact online usage among consumers during the hype of the pandemic. It means that when they feel secure about the services, and they go through convenience in their online payment transactions, it will increase their perception of using the platform.

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## 5. Conclusion

The study contributes to previous literature by considering the levels of trust, security, ease of use, and usefulness in consumers' perception of e-wallets with the advent of the COVID-19 pandemic. According to the study's findings, all the identified variables - trust, security, ease of use, and usefulness have a strong and positive relationship with consumers' perception of e-wallets. This suggests that as the levels of the identified variables increase for a consumer, the more positive their perception is of e-wallets. Furthermore, it can be concluded that consumers highly take into consideration these identified variables in deciding whether they will use a certain e-wallet service. Among the four identified variables, security and trust obtained the least mean score. This suggests that the level of security and trust in consumers' perception of e-wallets are still relatively on average. To expand their customer base, e-wallet service providers should maximize the use of modern encryption technology to increase the privacy and security of their e-wallets. As for trust, e-wallet service providers should put their maximum effort into ensuring all their services are functioning as well as further improving them to meet users' ever-changing needs. This can assist e-wallet service providers in attracting new users and retaining existing ones since the study found that e-wallet users are averaging high levels for all variables in their perception towards e-wallets, including security and trust, as they merely obtained the lowest mean among other variables.

### 5.1 Limitations

The interpretation of the results, despite its best efforts, this research contains several limitations. For one, the research was conducted in the Philippines. Therefore, the resulting levels of the identified variables and the strength of the relationship between the dependent and independent variables were only specific to those who are residing in the country. In addition, this study was confined to a sample size of only 201 respondents. If a larger number of responses had been gathered, the results might have been generalized to a specific targeted population. Furthermore, because the researchers did not examine the factors why consumers use electronic payment platforms, the whole consumer behavior experience is a restricted dimension in this study

### 5.2 Implications for Future Research

This research has paved the way for future research in its field. Future researchers can add depth to the study through qualitative methods and by expanding its scale to include respondents from all parts of the country, as this study is primarily focused on respondents in the National Capital Region. It will be interesting to compare user perceptions in other regions as well. The initial disparity could be due to internet connection issues, a concentration of loading branches in Luzon, or even a lack of benefit familiarity. It is also beneficial to understand banking users' data and insights, especially if they are attempting to transition to mobile payments as a more convenient method of transaction.

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