

Current Issue

Vol. 24 No. 1 (2022): June 2022



The Jurnal Teknik Industri is published biannually, in June and December, by Petra Christian University. Jurnal Teknik Industri aims to:

Promote a comprehensive approach to the application of industrial engineering in industries as well as incorporating viewpoints of different disciplines in industrial engineering.

Strengthen academic exchange with other institutions

Encourage scientist, practicing engineers, and others to conduct research and other similar activities.

The Jurnal Teknik Industri accredited by the Directorate General of Higher Education of Indonesia since 2003, with its decree: No. 35/DIKTI/Kep/2003; No. 45/DIKTI/Kep/2006;

No. 83/DIKTI/Kep/2009; No. 56/DIKTI/Kep/2012; No. 32a/E/KPT/2017

[accreditation certificate](#)

Published: 2022-05-31

[Focus and Scope](#)

[Peer Reviewers](#)

[Author Guidelines](#)

[Peer Review Process](#)

[Publication Ethics](#)

[Author Fees](#)

[Open Access](#)

[Plagiarism Check](#)

[Journal Template](#)

[Accredited by the Ministry of Research, Technology and Higher Education, Indonesia](#)

Articles

Application of the Mahalanobis-Taguchi System in Renal Profile of the Methadone Flexi Dispensing Program
Siti Khadijah Mat Saad, Sri Nur Areena Mohd Zaini, Mohd Yazid Abu 1-12



The Influence of Perceived Ease of Use and Perceived Usefulness on E-Wallet Continuance Intention
Intervening Role of Customer Satisfaction

Michelle Olivia, Nony Kezia Marchyta 13-22



A Modified Camel Algorithm for Optimizing Green Vehicle Routing Problem with Time Windows
Dana Marsetiya Utama, Wa Ode Nadhlah Safitri, Annisa Kesy Garside 23-36



Freight Forwarding Company Selection Using Hybrid IFAHP-IFTODIM Method
Fara El Nandhita Pratiwi, Agus Widodo, Isnani Darti 37-44



A Goal Programming Model for Joint Decision Making of Order Allocation, Supplier Selection, and Carrier Selection Considering Corporate Social Responsibility
Cucuk Nur Rosyidi, Alfia Makrifatul Khasanah, Pringgo Widyo Laksono 45-52



Green Supply Chain Performance Measurement using Green SCOR Model in Agriculture Industry: A Case Study
Arjuna Arjuna; Santoso Santoso; Rainisa Maini Heryanto 53-60



Improving Online Learning through the Use of Learning Management System Platform: A Technology Acceptance Model-Technology Readiness Index Combination Model Approach
Iima Mufidah, Luthfi Romiz Husaini, Dino Caesaron 61-72



Capability Factor Identification and Influence Assesment on Supply Chain Resilience in Indonesian Automotive Industry
I Anna Tul Munikhah, Ade Yanyan Ramdhani 73-82



Vol 5 - Vol 7 : No. 35/DIKTI/Kep/2003

Vol 8 - Vol 10 : No. 45/DIKTI/Kep/2006

Vol 11 - Vol 13 : No. 83/DIKTI/Kep/2009

Vol 14 - Vol 18 : No. 56/DIKTI/Kep/2012

Vol 19 - Vol 22: No. 32a/E/KPT/2017

Vol. 22 - Vol 27: No. 105/E/KPT/2022

Abstracting and Indexing



Editorial Team

EDITOR IN CHIEF

Siana Halim

Scopus ID = 23974215900, Department of Industrial Engineering, Petra Christian University, Surabaya, Indonesia, Subject area: Mathematical Modeling, Industrial Statistics (Scopus H-Index = 4)

EDITOR

Hui Ming Wee

Scopus ID= 7003796494, Department of Industrial and Systems Engineering, Chung Yuan Christian University, Chung-Li, Taiwan, Subject Area: Industrial Engineering(Scopus H-Index = 50)

Daniel Indarto Prajogo

Scopus ID= 6507982121, Department of Management, Monash University, Melbourne, Australia, Subject Area: Business, Management and Accounting, Decision Sciences (Scopus H-Index = 42)

I Gede Agus Widyadana

Scopus ID = 25655499500, Department of Industrial Engineering, Petra Christian University, Surabaya, Indonesia, Subject Area: Logistics, Optimization, Industrial Engineering (Scopus H-Index = 13)

Erwie Zahara

Scopus ID = 23092411400, Department of Marketing and Logistics Management, St. John's University Taiwan, Tamsui, Taiwan, Subject Area: Logistics Management(Scopus H-Index = 10)

Huynh Trung Luong

Scopus ID = 7005600332, Department of Industrial and Systems Engineering, Asian Institute of Technology Thailand, Bangkok, Thailand, Subject Area: Industrial Engineering (Scopus H-Index = 14)



JURNAL TEKNIK INDUSTRI : JURNAL KEILMUAN DAN APLIKASI TEKNIK INDUSTRI

JURUSAN TEKNIK INDUSTRI, FAKULTAS TEKNOLOGI INDUSTRI, UNIVERSITAS KRISTEN PETRA

P-ISSN : 20877439 <> E-ISSN : 20877439 Subject Area : Engineering

1.39474
Impact Factor

4674
Google Citations

S2
Current Accreditation

History Accreditation



SERTIFIKAT

Direktorat Jenderal Pendidikan Tinggi, Riset dan Teknologi
Kementerian Pendidikan, Kebudayaan, Riset dan Teknologi Republik Indonesia



Kutipan dari Keputusan Direktorat Jenderal Pendidikan Tinggi, Riset dan Teknologi
Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia

Nomor 105/E/KPT/2022
Peringkat Akreditasi Jurnal Ilmiah Periode 1 Tahun 2022

Nama Jurnal Ilmiah
Jurnal Teknik Industri
E-ISSN: 20877489

Penerbit: LPPM – Universitas Kristen Petra Surabaya

Ditetapkan Sebagai Jurnal Ilmiah

TERAKREDITASI PERINGKAT 2

Akreditasi Berlaku selama 5 (lima) Tahun, yaitu
Volume 22 Nomor 2 Tahun 2020 Sampai Volume 27 Nomor 1 Tahun 2025

Jakarta, 07 April 2022

Plt. Direktur Jenderal Pendidikan Tinggi,
Riset, dan Teknologi



Prof. Ir. Nizam, M.Sc., DIC, Ph.D., IPU, ASEAN Eng
NIP. 196107061987101001



The Influence of Perceived Ease of Use and Perceived Usefulness on E-Wallet Continuance Intention: Intervening Role of Customer Satisfaction

Michelle Olivia¹, Nony Kezia Marchyta^{1*}

Abstract: The developments of information technology and the advent of new normal in Indonesia had transformed how transaction was conducted, increasing the importance of e-wallet. This study aimed to analyze the effect of perceived ease of use, perceived usefulness, and customer satisfaction on e-wallet continuance intention. This study focused on customers of e-wallets in Indonesia. This research was quantitative research with data collection used the purposive sampling technique. This sampling was conducted by distributing questionnaires to 97 e-wallet customers in Indonesia, with eight questionnaires being rejected due to unmet criteria. Partial Least Square Path Modeling (PLSPM) was used to test the hypotheses. The study found that perceived ease of use had a direct positive influence on continuance intention as well as an indirect positive influence on it through customer satisfaction as an intervening variable, perceived enjoyment did not directly influence continuance intention but had indirect positive influence on it through customer satisfaction as an intervening variable, and customer satisfaction positively influenced continuance intention.

Keywords: Perceived ease of use, perceived usefulness, customer satisfaction, continuance intention.

Introduction

Indonesia has entered the new normal era where vitality, uncertainty, complexity, and ambiguity are rising across the social spectrum, leading to changes that make many sectors need to be supported by internet technology. According to Kemp [1], in 2020, internet users in Indonesia had reached 175.4 million people, equal to 65.5% of the population, it increased by around 17% or 25 million from 2019. The development and innovation of smartphone technology and its widespread use make them a primary public need. One of the innovations is the e-wallet which can be used as a cashless transactional tool [2].

E-wallets first came in Indonesia in the form of chips or cards such as e-toll, which can be used to pay on highways, supermarts, minimarts, etc. Innovations in e-wallet lead to a new form that is server-based instead of chip-based. This method utilizes internet media and can be used for online or offline transactions using QR codes [3].

There are already more than fifty e-wallets in Indonesia, among them are Shopeepay, Ovo, Gopay, Link Aja, Jenius, Dana, Go Mobile, etc. It relates to the campaign to promote e-wallets by the provider and government support to bring Indonesia into a cashless

society [4]. According to the survey, when paying for an online transaction, 30% use bank transfer, 26% use e-wallet, and 25% use cash on delivery [4]. The rise of e-wallets in Indonesia is caused by their ease of use, such as fast top-up, and because of their cashbacks and vouchers.

In the middle of the COVID-19 pandemic, the physical distancing policy proclaimed by the World Health Organization (WHO) encourages consumers to make contactless activities, including payment transactions [5]. In line with this, Aji *et al.* [5] found that perceived COVID risk directly affected the intention of e-wallet use during the COVID-19 pandemic. Furthermore, Trisnowati *et al.* [6] found an increase in the use of electronic money during the early stage of the pandemic, with the majority of it using e-wallets. However, Nasution *et al.* [7] found that even though there was an increase during the early stage of the pandemic, it was soon followed by a decrease in electronic money transactions compared to an increase in nominal transactions. One possible reason is due to the use of financial technology by limited communities in certain areas and inadequate facilities [7]. Therefore, it shows a need to research variables that encourage or hinder the intention of e-wallet use in Indonesia.

The competition among e-wallet providers means the provider needs to develop a system that encourages their customers to use their platform continually. Continuance intention on the cellular financial application is defined as an individual's intention to

¹ Faculty of Business and Economics, Department of Business Management, Petra Christian University, Jl. Siwalankerto 121-131 Surabaya 60236, Indonesia. Email: nonykezia@petra.ac.id

* Corresponding author

repeatedly use the application [8]. Limayem *et al.* [9] define continuance intention as post-adoption behavior. To make their customers have continuance intention, e-wallet providers must ensure that their customers can accept their technology.

Phuong *et al.* [10] found that customer satisfaction intervenes in the relation between perceived ease of use and perceived usability with continuance intention on the e-wallet platform in Vietnam. However, a study from Juniwati [11] did not find an intervening effect of customer satisfaction toward the relationship between perceived ease of use and continuance intention on online shopping platforms in Indonesia. Rantung *et al.* [12] didn't find a significant influence from perceived usefulness toward continuance intention on e-wallet in Manado, while Amin *et al.* [13] did not significantly influence perceived ease of use toward intention to use e-wallet in Bangladesh.

Perceived ease of use and usefulness had been previously researched as the antecedent of continuance intention, with customer satisfaction as mediating variable. However, those researches still result in conflicting results. Conflicting results from previous studies means that this topic still needs further research, especially since those results come from Indonesia and other developing countries. Therefore, this study aims to analyze the effect of perceived ease of use, perceived usefulness, and customer satisfaction on e-wallet continuance intention in Indonesia.

Methods

Model Construction

One of the prominent theories in studying digital platforms is Technology Acceptance Model (TAM). Although TAM was first introduced and applied in the context of technology, particularly in the field of information systems, it is now widely applied to other disciplines, including marketing, e-commerce [14], and repeat online reviews [15]. According to TAM, there are two determinants, perceived ease of use and perceived usefulness [16]. Perceived usefulness and perceived ease of use influence customer satisfaction [10]. Customers who feel that using an e-wallet is more accessible will feel satisfied with the e-wallet platform. According to Shang and Wu [17], customers with high satisfaction rates usually will continue to use the platform.

Perceived ease of use is the degree of belief of a person that using information technology will reduce effort and make work easier [16]. Moslehpour *et al.* [18] said that perceived ease of use is one of the critical elements of technology as society increasingly likes simpler and easier things that will not reduce

productivity, so the more straightforward to use, the better the acceptance from the community. According to Chi [19], perceived ease of use reflects the effort felt by the user when they use information technology. According to Hubert *et al.* [20], indicators of perceived ease of use are ease of learning, ease of meeting wish, ease of becoming skillful, and ease of transaction.

Perceived usefulness can be defined as how much an individual believes that the technology increases their productivity in doing transactions [16]. Someone who feels the benefit of information technology has a higher chance to accept that information technology [18]. Meanwhile, according to Chi [19], perceived usefulness refers to how much an individual believes that technology can increase their performance. According to Chi [19], indicators of perceived usefulness are performance improvement, productivity improvement, convenience, and effectiveness enhancement.

Customer satisfaction is defined as the portion of customer out of all customers who has satisfying experience with a company, product, or service [21]. According to Mensah and Mensah [22], customer satisfaction is a rating from customers on how a product or service results in satisfying consumption. In the application context, customer satisfaction is the state of satisfaction that comes from the application's performance that meets expectations [10]. Customer satisfaction is an evaluation based on the user's first time experience with the service. This evaluation can be a positive feeling, satisfaction, indifference, or dissatisfaction [23]. In the context of e-wallets, customer satisfaction is a positive experience that e-wallet users have from the service provided [24]. Customer satisfaction indicators are contentment level, good performance, conformity to expectation, and pleasing experience [24].

Continuance intention is the next step of acceptance. A customer forms their opinion after the first time they use the system. If they feel its use, it will lead to satisfaction with the system's service, which causes the customer to want to continue using the system [25]. According to Amoroso and Lim [8], continuance intention refers to the level of intent an individual has to keep doing a certain behavior. In the context of e-wallet, Shang and Wu [17] defined continuance intention as the user's intent to keep using the e-wallet. Indicators of continuance intention are returned intention level, usage intensity, and recommendation intensity [17].

Phuong *et al.* [10], in their study, explained that perceived ease of use significantly influences continuance intention, when the level of perceived ease of use is high, the user tends to use the technology again, on the other hand, if the level is low, the user avoids

using it again. Shang and Wu [17] explained that perceived ease of use influences continuance intention positively, if the user finds that the mobile application is easy to use, they tend to continue to use the mobile application. However, Amin *et al.* [13] found that perceived ease of use does not influence continuance intention on an e-wallet in Bangladesh.

H₁: Perceived ease of use influences continuance intention.

The study by Hamid *et al.* [26] shows that perceived usefulness significantly influences continuance intention, if technology gives the benefit that increases productivity and time efficiency, it will lead to continuance intention. This is supported by the study by Phuong *et al.* [10] on e-wallet customer in Vietnam, e-wallet that is useful to the customer tend to have better continuance intention. However, these studies are not supported by Rantung *et al.* [12], who studied e-wallets in Indonesia. They found that perceived usefulness does not significantly influence continuance intention.

H₂: Perceived usefulness influences continuance intention.

Phuong *et al.* [10] establish that perceived ease of use significantly affects customer satisfaction, information technology that only needs minimal effort to use will be more easily accepted by the user and create satisfaction. Phuong *et al.* [10] also argue that perceived ease of use is a defining factor of customer satisfaction in the context of technology application. On the other hand, Ashfaq *et al.* [27] found different results. Their study on online shopping shows that perceived ease of use does not significantly impact customer satisfaction as there are other factors such as expectation and enjoyment that might interfere with it. A similar result is displayed in the study by Juniwati [11]. Perceived ease of use does not significantly relate to customer satisfaction in online shopping.

H₃: Perceived ease of use influences customer satisfaction.

Phuong *et al.* [10] found that perceived usefulness significantly influences customer satisfaction. The benefit that an individual receives when using technology will lead to satisfaction, and the benefit can be in the form of productivity increase or efficiency, whether financial or non-financial. The study by Amin *et al.* [24] also supports this result. Perceived usefulness reflects the user's mind, recognizing that the technology is helpful and will lead to satisfaction in using the technology. However, Jaiswal and Singh [15] found different results. Website usability does not

significantly influence customer satisfaction in e-shopping.

H₄: Perceived usefulness influences customer satisfaction.

In their study, Shang and Wu [17] conclude that customer satisfaction significantly influences continuance intention. Technology users who are satisfied with the technology will develop a positive attitude toward it and continue using it. Phuong *et al.* [10] also found that customers who feel satisfied with the performance of e-wallet have the intention to use the e-wallet continually. However, those findings are different from the research of Juniwati [11], which found that customer satisfaction does not significantly influence continuance intention in online shopping.

H₅: Customer satisfaction influences continuance intention.

In their study, Phuong *et al.* [10] found that perceived ease of use indirectly influences continuance intention with customer satisfaction as an intervening variable, the easiness level of technology makes the user satisfied and tend to use the technology again. Similarly, Shang and Wu [17] also found that perceived ease of use influences continuance intention through customer satisfaction. If a technology only requires minimal effort to be used, the user will be more readily accept it and create satisfaction. This satisfaction increases the potential of using the technology continually. On the contrary, Juniwati [11] did not find any influence of perceived ease of use toward continuance intention through customer satisfaction.

H₆: Perceived ease of use indirectly influences

In their study, Phuong *et al.* [10] found that perceived usefulness indirectly affects continuance intention with customer satisfaction as an intervening variable. The benefit the user gets from using mobile applications leads to satisfaction, increasing the intention to use the technology application again. Similarly, Shang and Wu [17] also found that perceived usefulness significantly influences continuance intention through customer satisfaction. If the user thinks that the technology is beneficial for them, they will feel satisfied, and this satisfaction increases the potential of using the technology continually. However, Jaiswal and Singh [28] did not find any significant influence from perceived usefulness to customer satisfaction, while Juniwati [11] did not find a significant effect of customer satisfaction towards continuance intention that is necessary for customer satisfaction to become the intervening variable in the relationship between perceived usefulness and continuance intention.

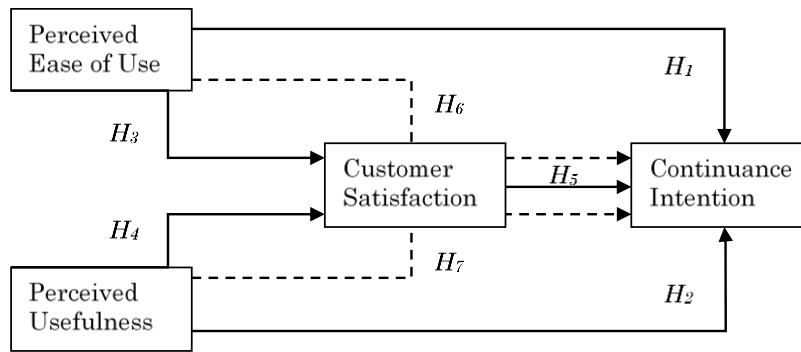


Figure 1. Literature review of relationship between concepts
 Source: Amin *et al.* [24], Chi [19], Hubert *et al.* [20], Shang and Wu [17]

Based on previous studies, the hypothesis as shown in Figure 1 are as follow:

- H_1 : Perceived ease of use influences continuance intention
- H_2 : Perceived usefulness influences continuance intention
- H_3 : Perceived ease of use influences customer satisfaction
- H_4 : Perceived usefulness influences customer satisfaction
- H_5 : Customer satisfaction influences continuance intention
- H_6 : Perceived ease of use indirectly influences continuance intention through customer satisfaction
- H_7 : Perceived usefulness indirectly influences continuance intention through customer satisfaction

Research Method

This study is a quantitative research that uses statistical numbers in processing and collecting data. This quantitative research uses an explanative method with a causal relationship. The population of this study is e-wallet users in Indonesia. Moreover, the respondent must be above 17 years old, have an e-wallet account, and have used it at least twice in the last three months. Purposive sampling with a questionnaire was used to collect data in this study, with the total number of questionnaires returned is 97, but only 89 meet the respondent criteria. The data was analyzed using PLSPM (Partial Least Square Path Modeling) to answer the research hypotheses.

The questionnaire contains questions regarding respondent profiles and questions regarding the research indicators. Indicators of perceived ease of use are adapted from the study of Hubert *et al.* [20], indicators of perceived usefulness are adapted from the study of Chi [19], indicators of customer satisfaction are adapted from the study of Amin *et al.* [24], while indicator of continuance intention is adapted from the study of Shang and Wu [17]. All indicators were measured with a Likert scale ranging from 1 to 5.

Results and Discussions

The result from respondents that meet the criteria shows that in the last three months, most of the respondents used 6 to 10 times and belong to the age group of 18 to 23 years old and 24 to 30 years old. Based on the e-wallet application used, the most used e-wallet is OVO. The total is more than 89 because each respondent can use more than one e-wallet. Based on the average top-up nominal, most of those who responded top-up between 50.000 IDR and 149.999 IDR. Based on the average transaction nominal, most of those who responded, the transaction between 50.000 IDR and 149.999 IDR. All respondents list practicality as a reason to use an e-wallet, 55 respondents list safety as a reason to use an e-wallet, and 45 respondents list cashback or promotion as a reason to use an e-wallet. Table 1 shows the respondent profile in this research.

The convergent validity is tested using the AVE (Average Variance Extracted) value, and all variables have an AVE value above 0.500 which means the convergent validity can be accepted. The discriminant validity is tested by using the cross-loading factor. Cross-loading values of each variable are greater on their construct than on other constructs. Therefore, all variables pass the discriminant validity test. The reliability is tested using Cronbach's Alpha value, and all variables have Cronbach's Alpha value above 0.600 which means the reliability can be accepted. Internal consistency reliability is tested using composite reliability value, and all variables have composite reliability values above 0.700, which means the reliability can be accepted. The loading factors of all measured items are above 0.500. Based on the results, all research variables are valid, and the research instruments are reliable.

Table 3 shows that the indicator of perceived ease of use with the highest outer loading value is "I feel that mastering the use of e-wallet application is quick and easy."

Table 1. Respondent profile

E-Wallet Usage Frequency	Number of respondents	Percentage (%)
2 to 6 times	22	24.7
6 to 10 times	45	50.6
11 to 15 times	9	10.1
>15 times	13	14.6
Total	89	100
Age	Number of respondents	Percentage (%)
18 to 23 years old	39	43.8
24 to 30 years old	39	43.8
31 to 37 years old	11	12.4
Total	89	100
E-Wallet Application	Frequency usage	Percentage (%)
Gopay	55	29.1
Ovo	62	32.8
Dana	11	5.8
Shopeepay	54	28.6
LinkAja	7	3.7
Total	189	100
Average Top Up Nominal	Number of respondents	Percentage (%)
Under 50.000 IDR	9	10.1
Between 50.000 IDR and 149.999 IDR	59	66.3
Between 150.000 IDR and 249.999 IDR	14	15.7
Between 250.000 IDR and 349.999 IDR	2	2.2
350.000 IDR or above	5	5.6
Total	89	100
Average Transaction Nominal	Number of respondents	Percentage (%)
Under 50.000 IDR	16	18
Between 50.000 IDR and 149.999 IDR	62	69.7
Between 150.000 IDR and 249.999 IDR	6	6.7
Between 250.000 IDR and 349.999 IDR	5	5.6
350.000 IDR or above	0	0
Total	89	100
Reason Using E-Wallet	Number of respondents	Percentage (%)
Practicality	89	47.1
Safety	55	29.1
Cashback or promotion	45	23.8
Total	189	100

Source: Data processed, 2021

Table 2. Convergent Validity and Reliability

Variable	AVE	Cronbach's Alpha	Composite reliability
Perceived ease of use	0.633	0.807	0.873
Perceived usefulness	0.632	0.808	0.873
Customer satisfaction	0.721	0.870	0.911
Continuance intention	0.713	0.799	0.882

Source: Data processed, 2021

It means the most crucial factor that determines perceived ease of use is the speed and easiness of mastering the e-wallet. Therefore, E-wallet providers need to ensure that their application can be mastered quickly and easily by creating a user-friendly system with interactive tutorials and help features.

Indicator of perceived usefulness with the highest outer loading is "my productivity is increased by using e-wallet application." Productivity is based on effectivity and efficiency, as such, e-wallet providers need to make sure that their application can help customers in various transactions to increase the effectivity. E-wallet providers can also increase efficiency by providing customers with cashback or reward point systems to reduce transaction costs.

The indicator with the highest outer loading value in customer satisfaction is "the e-wallet application functioning with good performance." Therefore, the most important factor in developing customer satisfaction among e-wallet users is the application's performance. It means e-wallet providers need to keep their applications up to date by providing maintenance and regular update to ensure smooth performance.

The indicator with the highest outer loading value in continuance intention is "I will use the e-wallet application as frequently as possible." It means a high frequency of transactions is the best indicator of e-wallet continuance intention. E-wallet providers can look at the data of the transaction frequency of their users to determine whether their work is in the right direction.

The *R-square* of customer satisfaction means perceived ease of use and perceived usefulness explain 50.9% of the variance in customer satisfaction, while the remaining 49.1% comes from variables not observed in the model. The *R-square* of continuance intention means perceived ease of use, perceived usefulness, and customer satisfaction explain 66.7% of the variance in continuance intention, while the remaining 33.3% comes from variables not observed in the model. The *Q-square* calculated from those *R-square* values is 0.837 or 83.7% which means this research model has high predictive relevance.

Table 5 shows that the *p-value* of the first hypothesis is 0.025, under 0.050, it means H_1 is true, the path coefficient is 0.224, which means the influence is positive. Therefore, perceived ease of use positively influences continuance intention. The *p-value* of the second hypothesis is 0.800, larger than 0.050, which means H_2 is rejected. Therefore, perceived usefulness does not influence continuance intention. The *p-value* of the third hypothesis is 0.000, under 0.050, which means H_3 is true, the path coefficient is 0.384, which means the influence is positive. Therefore, perceived ease of use positively influences customer satisfaction.

Table 3. Indicators of the study

Variables	Statement	Loading factor
Perceived Ease of Use	I feel that learning to use the e-wallet for transaction is easy	0.775
	The e-wallet application fulfills my wish regarding transaction.	0.818
	I feel that mastering the use of e-wallet applications is quick and easy.	0.823
Perceived Usefulness	I feel it is easy when transacting using e-wallet applications.	0.765
	My performance is increased by using e-wallet applications.	0.730
	My productivity is increased by using e-wallet applications.	0.849
	Transacting through e-wallet applications is more convenient than using cash.	0.828
Customer Satisfaction	Transacting through the e-wallet application enhance my effectiveness during transaction.	0.768
	I contend with the e-wallet application.	0.870
	The e-wallet application is functioning with good performance.	0.904
Continuance Intention	The e-wallet application meets my expectation.	0.836
	I am pleased with my experience in using the e-wallet application.	0.781
	I intend to keep using the e-wallet application for all transactions.	0.863
	I will use the e-wallet application as frequently as possible.	0.880
	I will recommend the e-wallet application to other people.	0.788

Source: Data processed, 2021

Table 4. R-square

Variable	R-square
Customer satisfaction	0.509
Continuance intention	0.667

Source: Data processed, 2021

The *p-value* of the fourth hypothesis is 0.000, under 0.050, which means H_4 is true, the path coefficient is 0.411, which means the influence is positive. Therefore, perceived usefulness positively influences customer satisfaction. The *p-value* of the fifth hypothesis is 0.000, under 0.050, which means H_5 is true, the path coefficient is 0.639, which means the influence is positive. Therefore, customer satisfaction positively influences continuance intention.

The indirect effect of perceived ease of use toward continuance intention through customer satisfaction is significant as its *p-value* is 0.001, smaller than 0.050, which means H_6 is true. The path coefficient of this indirect effect is 0.245, which means the direction of the indirect influence is positive. The coefficient is slightly higher but still comparable to the coefficient of direct influence of perceived ease of use toward continuance intention. The indirect effect of perceived usefulness toward continuance intention through customer satisfaction is significant as its *p-value* is 0.000, less than 0.050, which means H_7 is true. As perceived usefulness does not have a significant direct influence on continuance intention, it means it only has an indirect effect on customer satisfaction as the intervening variable. The path coefficient is 0.263, which means the direction of the indirect influence of perceived usefulness toward continuance intention through customer satisfaction as an intervening variable is positive.

The first hypothesis is accepted. Perceived ease of use influences continuance intention with the coefficient value is 0.224, which means if perceived ease of use is increased, it will lead to higher continuance intention. E-wallet customers will be more intent to continue using the e-wallet if they perceive that the e-wallet is easy to be learned, easy to use to fulfill their wish, and easy to be adept at using easy to be used for the transaction. This result supports the studies of Phuong *et al.* [10] and Shang and Wu [17].

The second hypothesis is rejected, which means perceived usefulness does not significantly influence continuance intention. This is similar to the finding of Amin *et al.* [24] but contrary to the findings of Hamid *et al.* [26] and Phuong *et al.* [10]. Even though customer feel that the e-wallet give them convenience while also increasing their productivity, performance, and effectiveness, it does not necessarily lead to the intent to use the e-wallet again as other factors need to be taken into account.

The third hypothesis is accepted. Perceived ease of use influences customer satisfaction with the coefficient value is 0.384, which means if perceived ease of use is increased, it will lead to higher customer satisfaction. Therefore, E-wallet customers who believe that the e-wallet is easy to learn, easy to use to fulfill their wish, easy to be adept at using it, and easy to use for transactions tend to have higher satisfaction. This result supports the study of Phuong *et al.* [10].

The fourth hypothesis is accepted. Perceived usefulness significantly influences customer satisfaction with the coefficient value of 0.411, which means an increase in perceived usefulness will increase customer satisfaction. Therefore, E-wallet customers will have a higher satisfaction rate if they feel that the e-

Table 5. Hypothesis Testing Results

Hypothesis	Original Sample	<i>T-Statistics</i>	<i>P-Values</i>
Perceived ease of use → continuance intention	0.224	2.274	0.025
Perceived usefulness → continuance intention	0.024	0.254	0.800
Perceived ease of use → customer satisfaction	0.384	4.275	0.000
Perceived usefulness → customer satisfaction	0.411	4.534	0.000
Customer satisfaction → continuance intention	0.639	6.515	0.000
Perceived ease of use → customer satisfaction → continuance intention	0.245	3.505	0.001
Perceived usefulness → customer satisfaction → continuance intention	0.263	3.739	0.000

Source: Data processed, 2021

wallet provides convenience and increases their productivity, performance, and effectiveness. This result supports the studies of Phuong *et al.* [10] and Amin *et al.* [24].

The fifth hypothesis is accepted, customer satisfaction significantly influences continuance intention with the coefficient value of 0.639, which means an increase in customer satisfaction will increase continuance intention. Therefore, E-wallet customers will have more intent to use the e-wallet continually if they are satisfied with the e-wallet performance as it successfully meets their expectations and provides them with an excellent overall experience. This result supports the studies of Phuong *et al.* [10] and Shang and Wu [17].

The sixth hypothesis is also accepted. It means that ease of use not only has direct also indirect influence toward continuance intention through customer satisfaction which acts as an intervening variable. The path coefficient of the indirect influence is 0.245, as the coefficient of both perceived ease of use to customer satisfaction and customer satisfaction to continuance intention are positive. It means higher perceived ease of use will lead to higher customer satisfaction, which will, in turn, lead to higher continuance intention. Customers who feel that the e-wallet is easy to use tend to have a higher satisfaction rate, which makes them intend to use it again. This result supports the studies of Phuong *et al.* [10] and Shang and Wu [17].

The seventh hypothesis is accepted, it means that even though perceived usefulness does not directly influence continuance intention, it still indirectly influence it through customer satisfaction as the intervening variable. The coefficient of this indirect path is 0.263, as the coefficient of both perceived usefulness to customer satisfaction and customer satisfaction to continuance intention are positive. It means that higher perceived usefulness will lead to higher customer satisfaction, leading to more continuance intention. Customers who feel that the e-wallet provides them with beneficial use will have a higher satisfaction rate, which makes them intend to use the e-wallet continually. This result supports the studies of Phuong *et al.* [10] and Shang and Wu [17].

Conclusion

Both perceived ease of use and perceived usefulness have a direct positive influence on customer satisfaction. Customers who believe that the e-wallet is easy to use will usually have more satisfaction from using the e-wallet compared to those who believe otherwise. Customers who benefit from using an e-wallet, such as convenience and performance improvement, will also tend to have higher satisfaction from using the e-wallet. In turn, customer satisfaction positively influences continuance intention, which means a higher satisfaction rate of using the e-wallet will result in a higher intention to use the e-wallet again.

Perceived ease of use has a direct positive influence on continuance intention. It means the more that the e-wallet application is perceived as easy to use by the customer, the higher the intention of the customer to continue using the e-wallet. In addition, perceived ease of use also has an indirect positive effect toward continuance intention through customer satisfaction as an intervening variable. It means the easier to use the customer feel the e-wallet is, the easier they will be satisfied with the service. Therefore, it will make them intend to continue using the e-wallet.

Perceived usefulness does not directly influence continuance intention, but it indirectly and positively influences continuance with customer satisfaction as an intervening variable. It means perceived usefulness needs to bring customer satisfaction before it can lead to continuance intention. The higher the belief of customers that they benefited from using e-wallet will lead to higher satisfaction regarding the e-wallet, and this will, in turn, make them have more intention of keep using the application.

To improve perceived ease of use, e-wallet application developers provide instructions for using the application like infographics, landing page, or explainer video for the first time user opens the application. Furthermore, to improve perceived usefulness, the developer should also increase the speed of doing top-up from various banks. Finally, to improve customer

satisfaction, application developers are expected to be able to optimize their applications so that no bugs occur or crash when the user uses the application to transact.

The study is not without limitations. Analysis of the finding reveals that there are unobserved variables that might explain customer satisfaction and continuance intention. Future research needs to consider additional variables that might influence customer satisfaction and continuance intention, such as perceived enjoyment, customer service, trust, and perceived value.

References

- Kemp, S., *Digital 2020: Indonesia - Data Reportal – Global Digital Insights*, 2020, retrieved from <https://datareportal.com/reports/digital-2020-indonesia> on 01 April 2021.
- Wijayanthi, I. M., Behavioral Intention of Young Consumers Towards E-Wallet Adoption: An Empirical Study Among Indonesian Users, *Russian Journal of Agricultural and Socio-Economic Sciences*, 85(1), 2019, pp. 79–93.
- Amoroso, D. L. and Magnier-Watanabe, R., Building A Research Model for Mobile Wallet Consumer Adoption: The Case of Mobile Suica in Japan, *Journal of Theoretical and Applied Electronic Commerce Research*, 7(1), 2012, pp. 94–110.
- Devita, D. V., *E-wallet Lokal Masih Mendominasi Q2 2019-2020*, 2020, retrieved from <https://iprice.co.id/trend/insights/top-e-wallet-di-indonesia-2020/> on 01 April 2021.
- Aji, H.M., Berakon, I., and Husin, M.Md., COVID-19 and E-Wallet Usage Intention: A Multigroup Analysis between Indonesia and Malaysia, *Cogent Business & Management*, 7(1), 2020, pp. 1–16.
- Trisnowati, Y., Muditomo, A., Manalu, E.P.S., Kesuma, Z., Adriana, D., and Dwiyani, R., The COVID-19 Pandemic's Impact on Indonesia's Electronic Retail Payment Transactions, *International Conference on Information Management and Technology (ICIMTech)*, 2020.
- Nasution, L.N., Ramli, Sadalia, I., and Ruslan, D., How Fintech Conditions in Indonesia During the Covid-19 Pandemic?, *International Proceeding of Law & Economic*, 2020, pp. 46–50.
- Amoroso, D. L. and Lim, R., The Mediating Effect of Habit on Continuance Intention, *International Journal of Information Management*, 37(6), 2017, pp. 693-702.
- Limayem, M., Hirt, S. G., and Cheung, C. M. K., How Habit Limits The Predictive Power of Intention: The Case of Information Systems Continuance, *MIS Quarterly: Management Information Systems*, 31(4), 2007, pp. 705–737.
- Phuong, N. N., Luan, L. T., Van Dong, V., and Le Nhat Khanh, N., Examining Customers' Continuance Intentions Towards E-Wallet Usage: The Emergence of Mobile Payment Acceptance in Vietnam, *Journal of Asian Finance, Economics and Business*, 7(9), 2020, pp. 505–516.
- Juniwati, Pengaruh Perceived Ease of Use, Enjoyment, dan Trust terhadap Repurchase Intention dengan Customer Satisfaction sebagai Intervening pada Belanja Online (Studi pada Mahasiswa Universitas Tanjungpura Pontianak), *Jurnal Ekonomi Bisnis dan Kewirausahaan*, 4(1), 2015, pp. 140–156.
- Rantung, H. M., Tumbuan, W. J. F. A., and Gunawan, E. M., The Determinants Influencing Behavioral Intention to Use E-Wallet During Covid-19 Pandemic in Manado, *Jurnal EMBA*, 8(4), 2020, pp. 352–360.
- Amin, Md. K., Azhar, A., Amin, K., and Akter, A., Applying The Technology Acceptance Model in Examining Bangladeshi Consumer's Behavioral Intention to Use Mobile Wallet: PLS-SEM Approach, *18th International Conference on Computer and Information Technology (ICCTT)*, Dhaka, 2015.
- Moriuchi, E. and Takahashi, I., An Empirical Investigation of the Factors Motivating Japanese Repeat Consumer to Review Their Shopping Experiences, *Journal of Business Research*, 82, 2018, pp. 381–390.
- Moriuchi, E., Okay, Google!: An Empirical Study on Voice Assistants on Consumer Engagement and Loyalty, *Psychology & Marketing*, 36(5), 2019, pp. 489–501.
- Davis, D. F., Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology, *Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology*, 13(3), 1989, pp. 319–340.
- Shang, D., and Wu, W., Understanding Mobile Shopping Consumers' Continuance Intention, *Industrial Management and Data Systems*, 117(1), 2017, pp. 213–227.
- Moslehpour, M., Pham, V. K., Wong, W. K., and Bilgiçli, I., E-Purchase Intention of Taiwanese Consumers: Sustainable Mediation of Perceived Usefulness and Perceived Ease of Use, *Sustainability*, 10(1), 2018, pp. 234.
- Chi, T., Understanding Chinese Consumer Adoption of Apparel Mobile Commerce: An Extended TAM Approach, *Journal of Retailing and Consumer Services*, 44, 2018, pp. 274–284.
- Hubert, M., Blut, M., Brock, C., Backhaus, C., and Eberhardt, T., Acceptance of Smartphone-Based Mobile Shopping: Mobile Benefits, Customer Characteristics, Perceived Risks, and the Impact of Application Context, *Psychology and Marketing*, 34(2), 2017, pp. 175–194.

21. Fungai, M., Factors Influencing Customer Repurchase Intention in the Fast Food Industry: A Case Study of Innscor Mutare, Zimbabwe, *Business & Social Sciences Journal (BSSJ)*, 2(1), 2017, pp. 120–141.
22. Mensah, I., and Mensah, R. D., Effects of Service Quality and Customer Satisfaction on Repurchase Intention in Restaurants on University of Cape Coast Campus, *Journal of Tourism, Heritage & Services Marketing*, 4(1), 2018, pp. 27–36.
23. Hsu, C., and Lin, J. C., Electronic Commerce Research and Applications What Drives Purchase Intention for Paid Mobile Apps? An Expectation Confirmation Model with Perceived Value, *Electronic Commerce Research and Applications*, 14(1), 2015, pp. 46–57.
24. Amin, M., Rezaei, S., and Abolghasemi, M, User Satisfaction with Mobile Websites: The Impact of Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Trust, *Nankai Business Review International*, 5(3), 2014, pp. 258–274.
25. Bhattacharjee., Understanding Information Systems Continuance: An Expectation-Confirmation Model, *MIS Quarterly*, 25(3), 2001, pp. 351–370.
26. Hamid, A. A., Razak, F. Z. A., Bakar, A. A., and Abdullah, W. S. W., The Effects of Perceived Usefulness and Perceived Ease of Use on Continuance Intention to Use E-Government, *Procedia Economics and Finance*, 35, 2016, pp. 644–649.
27. Ashfaq, M., Yun, J., Waheed, A., Khan, M. S., and Farrukh, M., Customers' Expectation, Satisfaction, and Repurchase Intention of Used Products Online: Empirical Evidence from China, *SAGE Open*, 9(2), 2019, pp. 1–14.
28. Jaiswal, S. and Singh, A., Influence of the Determinants of Online Customer Experience on Online Customer Satisfaction, *Paradigm*, 24(1), 2020, pp. 41–55.