

## Understanding Adoption Dynamics for Digital Wallets Among Batik MSMEs

Pebi Kurniawan <sup>1</sup>, Ali Jufri <sup>1,\*</sup>, Imam Hadiwibowo <sup>1</sup>, Fitri Aprianti <sup>2</sup>

<sup>1</sup>Faculty of Economic, Management Department, Universitas Muhammadiyah Cirebon, Indonesia

<sup>2</sup>Faculty of Science and Education, English Education Department, Universitas Muhammadiyah Cirebon, Indonesia

*alijufriumc2023@gmail.com (Correponding author)*

**Abstract.** This study investigates adoption of digital wallets among Micro Small Medium Entreprises (MSMEs) in the batik industry by applying Technology Acceptance Model constructs. Questionnaire data was gathered from 258 MSME owners in Indonesia and analyzed using structural equation modeling. The results demonstrate that perceived usefulness and ease of use positively influence intention to use digital wallets, which in turn impacts actual usage. However, intention to move from traditional to digital payments is not significantly linked to actual usage behavior. The findings imply that accentuating benefits and simplicity of digital wallets can potentiate their adoption across MSMEs. Further research on additional factors fostering sustained usage is recommended.

**Keywords:** digital payment, MSME, financial technology, batik industry, intention to use, ease of use, perceived usefulness.

## **1. Introduction**

Financial technology is developing quite rapidly and is a breakthrough that disrupts people's habits (Sangwan et al. 2020). One of the fintech developments is digital wallets, the results of a survey on digital wallet use in 2017 were still at 18%, and in 2018 its use succeeded in shifting the bank transfer method, which was 27%. In subsequent years, the portion of payments using e-wallets will be even greater, where it is projected to reach 45% in 2021, 49% in 2022, and 50% in 2023 (Dailysocial, 2023). As digital wallet users grow from various walks of life, business people are required to provide options for using digital wallets in buying and selling transactions (Malik & Annuar, 2021). The problem is that there are several business segments that are still not optimal in using digital wallets even though the sales potential is quite high if they are willing and able to provide payments through digital wallets. One of these segments is MSME (Tahar et al. 2020; Azamat et al. 2023). Digital payment systems open new economic opportunities for MSMEs by utilizing social media to buy and sell goods and services that can help improve financial health (Hong et al. 2020; Daud et al. 2022). Kwabena et al. (2019) revealed that the digital payment system used by MSMEs can increase trade, speed up business transactions and reduce costs between parties. MSMEs need to switch to digital payment systems to be able to compete both domestically and to penetrate international markets. This research has novelty because it wants to fill the research gap, among others:

- Several previous studies provided concepts for introducing a technology with the technology acceptance model (Tahar et al. 2020; Azamat et al. 2023). Technology Acceptance Model (TAM) includes several factors that can influence the acceptance of a technology among the public (Yang et al. 2021). Several factors in TAM include perceived usefulness, ease of use, attitude and behavioral intention (Malik & Anwar, 2021).

- From several factors, Daragmeh et al. (2021; Aji et al. 2020; Munsch, 2021) emphasizes two factors that are considered to have an important role in the acceptance of financial technology, namely perceived usefulness and ease of use. Several previous studies by Daragmeh et al. (2021; Aji et al. 2020; Munsch, 2021; Karim et al. 2020; Wicaksono et al. 2023) found that perceived usefulness influences attitudes towards switching to digital wallet use. perceived usefulness of the attitude of switching to digital wallet use. Le & Quang (2023) also emphasized that perceived usefulness attracts more consumers through digital purchases because it has a wider reach and lower costs. Likewise, Singh & Sinha (2020) also emphasized the importance of perceived usefulness in using digital wallets.

- In the introduction of digital technology, it is important for users to feel comfortable using the technology (Chawla & Joshi, 2019; Tahar et al. 2020). In the technology acceptance model, ease of use is an important element so that technology can be recognized and used by the public (Azamat et al. 2023). Yang et al. (2021; Chawla & Joshi, 2019; Tahar et al. 2020; Azamat et al. 2023) found that convenience in technology, especially financial technology, can encourage people's interest in switching to digital wallets. MSME actors' understanding of the usefulness and convenience of digital wallets is an important factor in the use of digital wallets among MSMEs. With an emphasis on these two aspects, it can increase the interest of MSME actors to switch from traditional transactions to digital transactions and foster an intention to use digital wallets. Furthermore, this study found that the intention to use digital wallets will increase the actual use of digital wallets among MSMEs.

- Several previous studies have analyzed the technology acceptance model using the same two aspects, namely perceived usefulness and ease of use. However, the analysis only focuses on interest in using a technology (Chawla & Joshi, 2019; Tahar et al. 2020; Azamat et al. 2023). There are still very few analyzes that discuss the actual use of a technology (Rahayu, 2022; Wongkangwang, 2022) and no similar analysis has been carried out in SMEs in the Batik industry.

Therefore, this study analyzes the factors of displacement from the use of technology, the desire to use technology and the actual use of digital wallets as a means of payment in SMEs in the Batik Industry.

## 2. Theoretical Framework

### 2.1. Perceived Usefulness and Intention to Switch Digital Wallet

Perceived usefulness is a condition in which a system is believed that its use can improve the performance and effectiveness of a person or an organization or business (Munsch, 2021). In using digital wallets among MSMEs, it is necessary to provide an introduction and understanding of the benefits, uses and importance of digital wallets as a transaction tool (Munsch, 2021). If MSME actors understand well the use of digital wallets, they can encourage their use among them (Aji et al. 2020; Munsch, 2021; Karim et al. 2020; Wicaksono et al. 2023). In 2020 it was discovered that generations X and Z made a sizable shift to paying for and purchasing goods or services digitally. This is due to the Covid-19 pandemic and the fact that digital payments have more advantages and uses than traditional payments (Daragmeh et al. 2021; Munsch, 2021). As for Aji et al. (2020) put more emphasis on the government's role in socializing the community, especially MSMEs, about the benefits and uses of digital wallets in business management. This can encourage the influence of perceived usefulness on the use of digital wallets. Meanwhile Karim et al. (2020) put more emphasis on the security of using digital wallets which can encourage the role of perceived usefulness in the intention to transfer payments using digital wallets. From the business side, Wicaksono et al. (2023) emphasizes that the use of digital wallets is a necessary marketing strategy and even a necessity in this modern era. The transition of services or products is a phenomenon that can occur for any individual, driven by various considerations such as the received service or goods not meeting anticipated quality standards (Rust & Zahorik, 1993; Keaveney, 1995). Notably, (Boulding, 1993; Bitner, 1990) conducted examinations regarding the intention to switch, revealing that factors influencing this intention include product/service quality, satisfaction in consuming the product/service, and even pricing (Clemes et al., 2020; Gupta, 1988).

H1: Perceived usefulness has significant effect on intention to switch digital wallet

### 2.2. Perceived Usefulness and Intention to Use Digital Wallet

Introducing a technology, technology must foster confidence in users that the technology has far more functions than the costs and hassles of using it (Daud et al. 2022). through digital purchases because they have a wider reach and lower costs. Likewise, Singh & Sinha (2020) also emphasized the importance of perceived usefulness in using digital wallets. For the lower middle class and businesses on the MSME scale, the use of digital wallets needs to be based on trust in digital wallet products and services. The public needs to be given more education regarding security, trust and the use of digital wallets. This research emphasizes that in optimizing the use of digital wallets, it is necessary to socialize that digital wallets can speed up work, increase productivity, build more efficient business performance, simplify transaction processes and have system diversity (Venkatesh & Davis, 2000). MSME players must realize that digital payment systems open up new economic opportunities for merchants by utilizing social media to buy and sell goods and services which can help improve financial health (Hong et al. 2020; Daud et al. 2022). Kwabena et al. (2019) revealed that the digital payment system used by MSMEs can increase trade, speed up business transactions and reduce costs between parties.

The ease of using digital wallets has been substantiated by the findings of several empirical studies, indicating that when individuals find it easy to learn and adopt a new system, it signifies the system's potential utility in facilitating optimal user experiences (Schmitz et al., 2022; Daragmeh et al., 2021; Chandra & Hartono, 2018). The intention to switch to digital wallets is shown to be driven by fulfilling customer interests and needs such as credit transactions, savings, online purchases, and other online-mediated business transactions (Almaiah, 2018; Nikou & Economides, 2017; Patel & Patel, 2018; To & Trinh, 2021; Värzaru et al., 2021). In the Indonesian context, research by Rahmadhani et al. (2022) concludes that perceived usefulness can enhance the intention to use digital wallets among Generation Z. This finding is corroborated by Setyawati and Polar's (2022) discovery that perceived usefulness can increase the intention to use, particularly among Go Pay users in Indonesia.

H2: Perceived usefulness has significant effect on intention to use digital wallet

### **2.3. Ease of Use and Intention to Switch Digital Wallet**

Ease of use is a perception of the extent to which a person believes that using a technology is easy (Chawla & Joshi, 2019). This condition is based on the hope of prospective users that the technology introduced to them is easy to use. In the introduction of digital technology, it is important for users to feel comfortable using the technology (Chawla & Joshi, 2019; Tahar et al. 2020). In the technology acceptance model, ease of use is an important element so that technology can be recognized and used by the public (Azamat et al. 2023). Yang et al. (2021; Chawla & Joshi, 2019; Tahar et al. 2020; Azamat et al. 2023) found that convenience in technology, especially financial technology, can encourage people's interest in switching to digital wallets. Yang et al. (2021) emphasized that the ease of using e-wallets must be socialized, especially for people over 40 years of age and people with low education. This can encourage the use of e-wallets among the public and the use of e-wallets can boost the country's economy. Meanwhile, Chawla & Joshi (2019) found that if people understand and understand that using e-wallets is easy, it can increase their trust in digital wallets and encourage the use of digital wallets. Maier (2016) investigated that when companies provide ease in purchase transactions, it can attract customers to switch to technology-based services. The convenience in transaction processes turns out to entice consumers to transition to services that are more transparent and easy to use. This is further supported by Ye and Potter (2011), stating that when consumers encounter conditions that facilitate transactions during purchases, it influences them to consider switching to new services/products.

H3: Ease of use has significant effect on intention to switch digital wallet

### **2.4. Ease of Use and Intention to Use Digital Wallet**

For ordinary people, convenience is an important aspect in order to accept and use a technology (Senali et al. 2023). In the context of digital payments, it involves various aspects including a set of rules, procedures, methods, media (i.e. mobile phones, computers, laptops, etc.), processes and systems for transferring funds between banks (). In digital payments include a collection of components and processes that enable two or more parties to transact and exchange monetary values through electronic means. Digital payment systems involve exchanging money between two users with the accompanying exchange of goods or services (Raharja et al. 2020). Amin et al. (2016) explained that perceived ease is a condition to the extent that individuals feel free from physical and mental effort in using an application. Perceived ease of use is the level of someone's belief that using technology is simple and easy. Hassan et al. (2023; Malik & Annuar, 2021; Senali et al. 2023) found the influence of perceived ease of use on e-wallet use.

Malik & Annuar (2021) analyzed the use of e-wallets in Malaysia and found that perceived usefulness, perceived ease of use and rewards were the main factors that could encourage people to use e-wallets. As for Senali et al. (2023) found that the effect of ease of use can be strengthened by consumer trust in the e-wallet products used. This research recommends that MSME managers be given an understanding of the ease of use of digital wallets. Venkatesh & Davis (2000) states that ease of use includes several constructive aspects, namely easy to learn, easy to remember, easy to understand and easy to use. Research from Venkatesh & Davis (2000) which extends TAM with a longitudinal study found that ease of use is one of the indicators used to increase the intention to use a product/service. Creating a website can make it easier for consumers to increase the effectiveness and usefulness of the system.

H4: Ease of use has significant effect on intention to use digital wallet

### **2.5. The Mediation Role of Intention to Switch**

The switching of transaction methods from physical to non-physical is a form of development that has many benefits. digital wallet users from various levels of society, business actors are required to provide options for using digital wallets in buying and selling transactions (Yan et al. 2021). Digital payment systems open new economic opportunities for MSMEs by utilizing social media to buy and sell goods and services that can help improve financial health (Hong et al. 2020; Daud et al. 2022). Transferring transaction methods can increase the actual use of digital wallets. Yan et al. (2021) found that the desire to use digital technology is the potential for actual use of technology.

Likewise with Sharma et al. (2020) emphasizes that the many advantages of digital transactions and marketing encourage business people to use digital strategies in sales. On the other hand, Rehman & Yaqoob (2022) found a mediating influence from intention to switch digital technologies on the relationship between perceived usefulness and actual use of digital technology. The research findings of Sambadan & Lord (1995) have elucidated that a set of consumer decision-making considerations is typically influenced by factors such as prior experience, product knowledge, and information search through media search. In the present era, information search for products and services has become easily accessible for Generation Y and Z. This further facilitates consumers in exploring alternative products that offer practical benefits and ease of use, considering both the functional utility and emotional aspects of the product/service.

H5: Intention to switch has significant effect on actual use of digital wallet

H6: Intention to switch mediate the relationship between perceived usefulness and actual use of digital wallet

H7: Intention to switch mediate the relationship between ease of use and actual use of digital wallet

### **2.6. The Mediation Role of Intention to Use**

Several previous studies have analyzed the technology acceptance model using the same two aspects, namely perceived usefulness and ease of use. However, the analysis only focuses on interest in using a technology (Chawla & Joshi, 2019; Tahar et al. 2020; Azamat et al. 2023). There are still very few analyzes that discuss the actual use of a technology (Rahayu, 2022; Wongkangwang, 2022). Therefore, this research reveals the influence of intention to use on actual use of digital wallets within the scope of MSMEs. On the other hand, several previous studies have found that intention to use has a mediating effect on perceived usefulness and actual use as well as on ease of use and actual use. These results are supported by Al Sharafi et al. (2017; Atta & Romli, 2018) who also found the mediating role of intention to use. These findings show that with the intention to use, the potential for increasing actual use in the MSME sector will be higher. Actual use is a situation where users use the system consistently as a tool in every activity on the basis of benefits and ease of doing work (Kurniawan et al. 2020).

H6: Intention to use has significant effect on actual use of digital wallet

H9: Intention to use mediate the relationship between perceived usefulness and actual use of digital wallet

H10: Intention to use mediate the relationship between ease of use and actual use of digital wallet

## **3. Research Method**

This research employed a quantitative approach through a survey method. Data collection was conducted through the distribution of questionnaires. The research population comprised all Batik MSME practitioners, encompassing two provinces in Indonesia, selected based on their hosting several significant and potential Batik MSME centers. These two provinces were also chosen due to their substantial number of students pursuing undergraduate to doctoral programs, prompting MSME to transition to digital transactions. The target sample for this study was 300 MSME scattered across the two provinces. Data collection was carried out through questionnaires administered in person and via

GoogleForm. After screening, it was determined that 258 MSME provided complete responses to the questionnaires. The statistical technique employed was AMOS 22, and purposive sampling was used as the sampling technique with criteria including: (1) MSME operating for a minimum of 3 years, (2) producing batik using both natural and synthetic colors, (3) having a minimum education level of senior high school. Each questionnaire item was measured using a Likert scale with options ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The variables, operational definitions, and indicators/items can be found in Table 1.

Table 1. Variable, Operational Definitions, and Dimensions/Indicators/Items

No	Variable /Source	Operational Definition	Indicators/Items
1.	Perceived Usefulness (Munsch, 2021; Aji et al. 2020; Karim et al. 2020; Wicaksono et al. 2023).	The conditions where the usage of digital wallet payment systems is believed to enhance the performance and effectiveness o MSMEs in conducting transactions.	Consists of 6 indicators/items <ul style="list-style-type: none"> <li>- Digital wallet payment systems facilitate quicker completion of payment transactions.</li> <li>- Utilizing digital wallet payment systems enhances overall business productivity.</li> <li>- The use of digital wallet payment systems contributes to improved business performance.</li> <li>- Employing digital wallet payment systems enhances the effectiveness of business transactions.</li> <li>- Utilizing digital wallet payment systems improves the efficiency of business transactions.</li> <li>- Digital wallet payment systems enable more accurate completion of payment transactions.</li> </ul>
2.	Ease of Use (Yang et al. (2021; Chawla & Joshi, 2019; Chawla & joshi, 2019; Tahar et al. 2020).	Ease of using digital wallets in business transactions.	Consists of 6 indicators/item <ul style="list-style-type: none"> <li>- Ease of learning to use digital wallet payment systems.</li> <li>- Ease of remembering how to use digital wallet payment systems.</li> <li>- Ease of interacting with digital wallet payment systems.</li> <li>- Ease of using digital wallet payment systems.</li> <li>- Ease of conducting payment transactions anywhere.</li> <li>- Ease of conducting payment transactions at any time.</li> </ul>
3.	Intention to switch (Yan et al. 2021; Hong et al. 2020; Daud et al. 2022)	The desire to shift the method of transactions from physical to non-physical (digital wallet) which is expected to open up new economic opportunities.	Consists of 3 indicators/item <ul style="list-style-type: none"> <li>- I am willing to consider switching to digital wallet payment systems.</li> <li>- I intend to switch to digital wallets due to the ease of using digital wallet payment systems.</li> <li>- I am open to transitioning to digital wallets.</li> </ul>
4.	Intention to Use	The desire to use a digital wallet is expected to increase business growth. .	Consists of 3 indicators/item; <ul style="list-style-type: none"> <li>- I will use digital wallet payment systems for my business transactions.</li> <li>- I plan to use digital wallet payment systems for future business transactions.</li> <li>- I highly recommend other MSME practitioners to utilize digital wallet payment systems for their business transactions.</li> </ul>
4.	Actual Use	The amount of time used to use the digital wallet and the frequency of use.	Consists of 3 indicators/item <ul style="list-style-type: none"> <li>- I utilize digital wallet payment systems for my business transactions.</li> <li>- I frequently access digital wallet payment systems daily for business needs.</li> <li>- I consistently use and experiment with digital wallet payment systems for my business transactions.</li> </ul>

## 4. Result and Discussion

### 4.1. Respondent Characteristic

The data in this research was obtained by distributing questionnaires to 300 respondents and obtaining 258 acceptable results. 258 respondents are MSMEs in the Batik industry in West Java and Central Java. Respondents in this study were classified into several characteristics, namely the respondent's gender, the respondent's age, the respondent's highest level of education and the respondent's occupation. The results of the respondent classification are shown in the Table 2.

Table 2. Respondent Characteristics

Characteristics	Classification	Total	Percentage
Gender	Man	111	43%
	Woman	147	57%
Age	< 20 Years Old	34	13%
	20 – 30 Years Old	70	27%
	31 – 40 Years Old	54	21%
	41 – 50 Years Old	98	38%
	> 50 Years Old	3	1%
Education	High School	75	29%
	Bachelor	106	41%
	Master	77	30%

Table 2 shows the classification results based on respondent characteristics. From these results it was found that from the aspect of gender, the number of males and females in the research respondents was dominated by females with a percentage of 57% while the remaining 43% were males. Furthermore, respondents in this study had a variety of age ranges with the highest number in the age range 41-50 years of 38%. In terms of education, respondents with the last degree had the highest number, namely 41%.

### 4.2. Analysis Result Using AMOS

Testing of data and hypotheses in this research uses the structural equation model method with AMOS 22 software. Analysis includes prerequisite tests, confirmatory factor analysis (CFA) and hypothesis testing. Prerequisite tests consist of data normality tests and outlier tests. The CFA includes validity tests, reliability tests and goodness of fit tests. Next, the research hypothesis test was carried out.

#### Normality Test and Outliers

Normality testing aims to determine whether the distribution of research data is normally distributed or not. AMOS analysis requires research data to have a normal distribution with the criteria for a minimum multivariate c.r value of -2.58 and a maximum of 2.58. The results of testing the data show the value of c.r. Multivariate is 1.019, where this value meets the normality test criteria. Furthermore, analysis in AMOS also requires that research data does not contain outliers. Outlier data is data that has a mahalanobis d-squared value in the mahalanobis distance table that is smaller than the chi-square value of the data. The chi-square value of data with a total of 31 indicators and a significance level of 0.001 is 55.0.

Table 3. Mahalanobis distance

Observation number	Mahalanobis d-squared	p1	p2
249	43,876	,002	,466
69	42,380	,004	,254
149	41,226	,005	,156
78	39,950	,008	,133
169	36,930	,017	,454
91	35,922	,022	,516

Table 3 shows that the data in this study has the highest mahalanobis d-square value of 43.876, which means there is no data that has a value higher than the chi-square value, namely 55.0. These results indicate that the data in the study are free from outliers.

**Confirmatory Factor Analysis**

CFA testing includes data validity tests, reliability tests and goodness of fit tests. The data validity test refers to Hair et al. (2014) with valid indicator criteria having a factor loading value of > 0.5. The validity of the construct refers to the AVE value with AVE criteria > 0.5. Furthermore, construct reliability refers to the composite reliability value with CR criteria > 0.7. The analysis results are shown in the Table 4.

Table 4. Validity and Reliability Test

variable	Item	Loading Factors	AVE	CR
Perceived Usefulness	PU1	0,83	0,63	0,91
	PU2	0,817		
	PU3	0,792		
	PU4	0,707		
	PU5	0,846		
	PU6	0,779		
Ease of Use	EU1	0,764	0,60	0,90
	EU2	0,758		
	EU3	0,789		
	EU4	0,85		
	EU5	0,856		
	EU6	0,62		
Intention to switch	IM1	0,506	0,56	0,77
	IM2	0,706		
	IM3	0,679		
Intention to Use	IU1	0,748	0,52	0,76
	IU2	0,693		
	IU3	0,722		
Actual Use	AU1	0,776	0,55	0,72
	AU2	0,71		
	AU3	0,54		

Table 4 shows that the loading factor value for each item has a value of > 0.5 so that based on the criteria of Hair et al. (2014) all indicator items in this study are valid. Furthermore, construct validity in



this study was measured from the AVE value with the condition that  $AVE > 0.5$ . The results show that all research variables have met the validity requirements. As for construct reliability, it is known that all variables have a CR value  $> 0.7$  so that all variables are declared reliable.

### Goodness of Fit

Goodness of fit testing is carried out to determine the feasibility of a research model. The model in Amos is required to meet several goodness of fit criteria. This research uses 6 criteria, namely chi-square (must be small), probability ( $> 0.05$ ), GFI ( $> 0.90$ ), AGFI (0.90), TLI (0.90) and NFI (0.90). In the first stage of analysis, it was found that there were 2 criteria that did not pass, namely the chi-square value was 279.981 with a probability of 0.000. Therefore, it is necessary to modify the model referring to the modification index table in the Amos output by providing a covariance line and/or deleting items that have high modification index values. The goodness of fit test results after modification are shown in the Table 5.

Table 5. Goodness of Fit Test

Goodness of Fit	Kriteria	Cut-off value	Keterangan
Chi-Square	Must be small	173,764	Fit
Probability	$> 0,05$	0,171	Fit
GFI	$\geq 0.90$	0,939	Fit
AGFI	$\geq 0.90$	0,919	Fit
TLI	$\geq 0.90$	0.994	Fit
NFI	$\geq 0.90$	0.948	Fit

Table 5 shows that all goodness of fit criteria have met the fit criteria, namely chi-square (must be small), probability ( $> 0.05$ ), GFI ( $> 0.90$ ), AGFI (0.90), TLI (0, 90) and NFI (0.90), so this research model has a good feasibility model.

### 4.3. Hypothesis Test

Hypothesis testing refers to the regression weight table. The direction of influence between variables can be seen from the estimated value in each variable relationship, the estimated value can be seen in Figure 1 and Table 6.

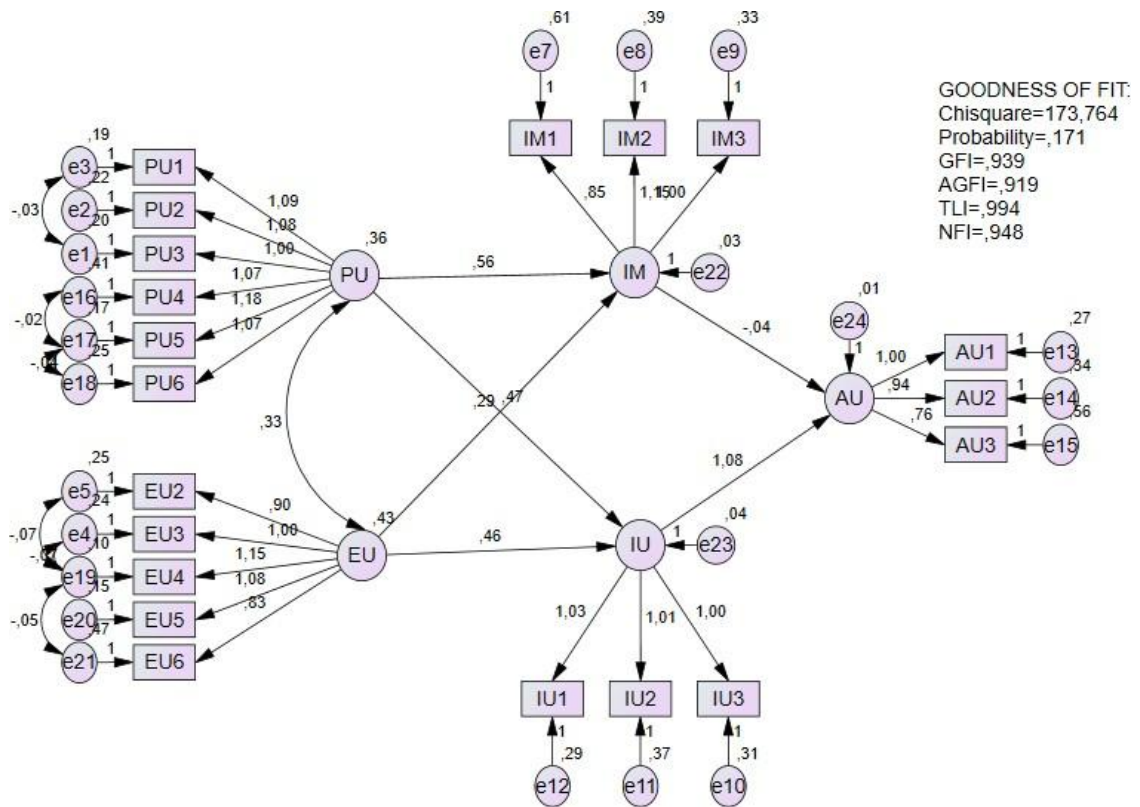


Fig.1: Path Diagram Amos

In Figure 1 it can be seen the estimated value of the influence between variables. A positive estimate value indicates a positive influence, while a negative estimate value indicates a negative influence. The significance of the influence between variables is known from the value of the critical ratio and probability. The effect is significant if the critical ratio value is > 1.96 and the probability value is < 0.05. The test results are shown in the Table 6.

Table 6. Regression Weight

	Estimate	S.E.	C.R.	P	Discription
IM <--- PU	,557	,097	5,742	.000*	H1 accepted
IM <--- EU	,291	,083	3,515	.000*	H2 accepted
IU <--- PU	,471	,079	5,934	.000*	H3 accepted
IU <--- EU	,458	,073	6,237	.000*	H4 accepted
AU <--- IM	,038	,257	,148	,883	H5 rejected
AU <--- IU	1,083	,244	4,438	.000*	H6 accepted

Note: \*sign= alpha < 0.05

Table 6 shows the results of hypothesis testing and it is known that PU (perceived usefulness) has a positive and significant effect on IM (intention to switch) with a positive estimate value, critical ratio value > 1.96 and probability value < 0.05 so that H1 is supported. Furthermore, EU (ease of use) has a

positive and significant effect on IM (intention to switch) with a positive estimate value, a critical ratio value  $> 1.96$  and a probability value  $< 0.05$  so that H2 is supported. Further findings show that PU (perceived usefulness) has a positive and significant effect on IU (intention to use) with a positive estimate value, a critical ratio value  $> 1.96$  and a probability value  $< 0.05$  so that H3 is supported. Furthermore, EU (ease of use) has a positive and significant effect on IU (intention to use) with a positive estimate value, critical ratio value  $> 1.96$  and probability value  $< 0.05$  so that H4 is supported. Further hypothesis testing found that IM (intention to switch) has no effect on AU (actual use) with a critical ratio value  $< 1.96$  and a probability value  $> 0.05$  so H5 rejected. Then it was found that IU (intention to use) has a positive and significant effect on AU (actual use) with a positive estimate value, critical ratio value  $> 1.96$  and probability value  $< 0.05$  so that H6 is supported.

#### 4.4. Mediation Analysis

Testing the mediation hypothesis is calculated using the procedure developed by the Sobel or Sobel test (Ghozali, 2016). Calculation of the mediation effect using the Sobel formula is as follows:

$$z = \frac{ab}{\sqrt{(b^2SEa^2) + (a^2SEb^2)}}$$

This study considers 4 mediating effects with the calculation results as shown in table 7.

Table 7. Mediation Analysis

Mediation Analysis	Z Score	Probability	Result
PU – IM – AU	0,1478	0,882	No Mediation Effect
EU – IM – AU	0,1477	0,883	No Mediation Effect
PU – IU - AU	3.5602	0,000	Mediation Effect
EU – IU - AU	3,6234	0,000	Mediation Effect

The existence of a mediating influence in the Sobel test can be seen from the z-score and probability values with z-score criteria  $> 1.96$  and probability  $< 0.05$ . The analysis results in Table 6 show that intention to move cannot mediate the influence of perceived usefulness and ease of use on actual use so that H7 and H8 are not supported. Furthermore, it was found that intention to use was able to mediate the influence of perceived usefulness and ease of use on actual use so that H9 and H10 were supported.

## 5. Discussion

Digital transformation is a necessity in this modern era. In trade and business, the buying and selling system has also developed with the emergence of financial technology. This study reveals the variables that can support the shift in the use of payment systems from physical to digital payments in the Batik Industry MSME sector in West Java and Central Java. This study proposes two aspects in the development of digital wallets as a means of payment for MSME products in the batik industry, namely perceived usefulness and ease of use. Several previous studies have analyzed the technology acceptance model using the same two aspects, namely perceived usefulness and ease of use. However, the analysis only focuses on interest in using a technology (Chawla & Joshi, 2019; Tahar et al. 2020; Azamat et al. 2023). There are still very few analyzes that discuss the actual use of a technology (Rahayu, 2022; Wongkangwang, 2022) and no similar analysis has been carried out in SMEs in the Batik industry. Therefore this study analyzes the factors of displacement from the use of technology, the desire to use technology and the actual use of digital wallets as a means of payment in SMEs in the Batik Industry.

This study emphasizes that in the use of technology, perceived usefulness is an important aspect that can attract users to switch from using physical to digital payment systems.

## **6. Implication**

### **6.1. Theory Implication**

This research shows that perceived usefulness influences intention to move. So it is proven that if the use of digital wallets can be understood and explained properly to batik industry SMEs, it can encourage business actors to use digital wallets. These findings are in line with research by Daragmeh et al. (2021; Aji et al. 2020; Munsch, 2021; Karim et al. 2020; Wicaksono et al. 2023) which states that there is an effect of perceived usefulness on attitudes towards switching to digital wallet use. The shift in payment methods from traditional to digital is driven by a higher need for and perceived usefulness (Daragmeh et al. 2021). In 2020 it was discovered that generations X and Z made a sizable shift to paying for and purchasing goods or services digitally. This is due to the Covid-19 pandemic and the fact that digital payments have more advantages and uses than traditional payments (Daragmeh et al. 2021; Munsch, 2021).

As for Aji et al. (2020) put more emphasis on the government's role in socializing the community, especially MSMEs, about the benefits and uses of digital wallets in business management. This can encourage the influence of perceived usefulness on the use of digital wallets. Meanwhile Karim et al. (2020) put more emphasis on the security of using digital wallets which can encourage the role of perceived usefulness in the intention to transfer payments using digital wallets. From the business side, Wicaksono et al. (2023) emphasize that the use of digital wallets is a necessary marketing strategy and is even a necessity in this modern era. Furthermore, the perceived usefulness of digital wallets has also been proven to increase the intention to use digital wallets for MSME players. These results show that if MSME players are able to understand well the uses and advantages of using digital wallets, more MSME players will want to use digital wallets. Le & Quang (2023) also emphasized that perceived usefulness attracts more consumers through digital purchases because it has a wider reach and lower costs. Likewise, Singh & Sinha (2020) also emphasized the importance of perceived usefulness in using digital wallets. For the lower middle class and businesses on the MSME scale, the use of digital wallets needs to be based on trust in digital wallet products and services. The public needs to be given more education regarding security, trust and the use of digital wallets. This research emphasizes that in optimizing the use of digital wallets, it is necessary to socialize that digital wallets can speed up work, increase productivity, build more efficient business performance, simplify transaction processes and have system diversity (Venkatesh & Davis, 2000). MSME players must realize that digital payment systems open up new economic opportunities for merchants by utilizing social media to buy and sell goods and services which can help improve financial health (Hong et al. 2020; Daud et al. 2022). Kwabena et al. (2019) revealed that the digital payment system used by MSMEs can increase trade, speed up business transactions and reduce costs between parties. MSMEs need to switch to digital payment systems to be able to compete both domestically and to penetrate international markets.

In the introduction of digital technology, it is important for users to feel comfortable using the technology (Chawla & Joshi, 2019; Tahar et al. 2020). In the technology acceptance model, ease of use is an important element so that technology can be recognized and used by the public (Azamat et al. 2023). This research found that in the MSME industry, ease of use is able to encourage increased use of digital wallets for traders. These findings are in line with previous research by Yang et al. (2021; Chawla & Joshi, 2019; Tahar et al. 2020; Azamat et al. 2023) who found that the ease of technology, especially financial technology, can encourage people's interest in switching to digital wallets. Yang et al. (2021) emphasizes that the ease of using e-wallets must be disseminated, especially to people over the age of 40 and among people with low education. This can encourage the use of e-wallets among the public and the use of e-wallets can boost the country's economy. Meanwhile, Chawla & Joshi (2019) found that if people understand and understand that using e-wallets is easy, it can increase their trust in

digital wallets and encourage the use of digital wallets. On the other hand, this study also found that ease of use of digital wallets can increase the intention to use digital wallets for SMEs in the Batik industry. These results are supported by Hasan et al. (2023; Malik & Annuar, 2021; Senali et al. 2023) who also found the effect of perceived ease of use on e-wallet use. Malik & Annuar (2021) analyzed the use of e-wallets in Malaysia and found that perceived usefulness, perceived ease of use and rewards were the main factors that could encourage people to use e-wallets. As for Senali et al. (2023) found that the effect of ease of use can be strengthened by consumer trust in the e-wallet products used.

This research recommends that MSME managers be given an understanding of the ease of use of digital wallets. Ease of use includes several aspects, namely easy to learn, easy to remember, easy to understand and easy to use (Venkatesh & Davis, 2000). Amin et al. (2016) explained that perceived ease is a condition to the extent that individuals feel free from physical and mental effort in using an application. Perceived ease of use is the level of someone's belief that using technology is simple and easy. MSME actors' understanding of the usefulness and convenience of digital wallets is an important factor in the use of digital wallets among MSMEs. With an emphasis on these two aspects, it can increase the interest of MSME actors to move from traditional transactions to digital transactions and foster an intention to use digital wallets. Furthermore, this study found that the intention to use digital wallets will increase the actual use of digital wallets among MSMEs. Intention to use is also proven to be able to provide a mediating effect on perceived usefulness and actual use as well as on ease of use and actual use. These results are supported by Al Sharafi et al. (2017; Atta & Romli, 2018) who also found the mediating role of intention to use. These findings show that with the intention to use, the potential for increasing actual use in the MSME sector will be higher. Actual use is a situation where users use the system consistently as a tool in every activity on the basis of benefits and ease of doing work (Kurniawan et al. 2020). Several previous studies have also found that the intention to use digital technology is an indication of actual use of a technology (Chaveesuk, 2021; Rahayu, 2022; Wongkangwang, 2022). This study emphasizes that the use of digital wallets among MSMEs should not only be an intention to use but actual use which is the main activity and is relied on in financial management. Some aspects that need attention are consistency in using digital wallets, understanding systems and features and sharing references and experiences with others (Venkatesh & Davis, 2000).

## **6.2. Managerial Implication**

This study emphasizes that in the use of technology, perceived usefulness is an important aspect that can attract users to switch from using physical to digital payment systems. Then in optimizing the use of digital wallets it is necessary to socialize that digital wallets can speed up work, increase productivity, build more efficient business performance, simplify the transaction process and have a variety of systems. This research also recommends that MSME managers be given an understanding of the ease of use of digital wallets. Ease of use includes several aspects, namely easy to learn, easy to remember, easy to understand and easy to use. Furthermore, this study emphasizes that the use of digital wallets among MSMEs should not only be an intention to use but actual use which is the main activity and is relied on in financial management. Some aspects that need attention are consistency in using digital wallets, understanding systems and features and sharing references and experiences with others.

## **7. Conclusion**

In summary, this study offers valuable insights into drivers of digital wallet adoption among MSMEs in the batik sector. The findings confirm the significant roles of perceived usefulness and ease of use in shaping intention to use, which ultimately impacts actual usage behavior. However, the limitations of cross-sectional self-reported data and single industry focus should be noted. Further research could enrich the analysis by adopting a longitudinal design, diversifying the sample across sectors, and incorporating additional theoretical lens. This empirical investigation elucidates acceptance factors for an emerging financial technology within a unique industry context. The results can inform promotional

strategies to accelerate digital payments adoption among MSMEs for enhanced efficiency.

## 8. Limitations of The Study and Future Research Agenda

1. This study was conducted in two provinces on the Java Island of Indonesia, despite the country having numerous provinces. In the future, it is advisable to consider MSME distributed beyond Java Island. Researchers could contemplate utilizing random sampling techniques by selecting provinces hosting the largest MSME centers in Indonesia, especially those outside Java Island.
2. This research is based on the perceptions of MSME owners/managers and relies on self-reporting. To avoid bias and ensure clarity in the future, there is a need for questionnaire assistance and a reduction in data collection via GoogleForm.
3. For future research, the model should consider organizational and environmental contexts to better understand their impact on sustainable MSME performance and competitive advantages (Kusuma et al., 2023).

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## References

- Aji, H. M., Berakon, I., & Md Husin, M. (2020). COVID-19 and e-wallet usage intention: A multigroup analysis between Indonesia and Malaysia. *Cogent Business & Management*, 7(1), 1804181.
- Al-Sharafi, M. A., Arshah, R. A., Herzallah, F. A., & Alajmi, Q. (2017). The effect of perceived ease of use and usefulness on customers intention to use online banking services: the mediating role of perceived trust. *International Journal of Innovative Computing*, 7(1).
- Almaiah, M. A. (2018). Acceptance and usage of a mobile information system services in University of Jordan. *Education and Information Technologies*, 23(5), 1873–1895. <https://doi.org/10.1007/s10639-018-9694-6>.
- Amin, M. K., Azhar, A., Amin, A., & Akter, A. (2016, December). Applying the technology acceptance model in examining Bangladeshi consumers' behavioral intention to use mobile wallet: PLS-SEM approach. In *2015 18th International Conference on Computer and Information Technology (ICCIT)* (pp. 93-98). IEEE.
- Atta, M. T., & Romli, A. (2018). The Mediation Effect of Intention to Use Information System on the Association Between Usability and User's Satisfaction in UMP. *Advanced Science Letters*, 24(10), 7806-7809.
- Azamat, O., Sherzod, S., Dilshod, S., Gulyar, K., Gulnur, A., Zarifa, K., & Sarvar, T. (2023). The Role of Digital Technology in the Future of Insurance and Economic Development. *Journal of Law and Sustainable Development*, 11(5), e1081-e1081.
- Bitner, Mary Jo (1990). Evaluating Service Encounters: The Effects of Physical Surroundings and Employee Responses. *Journal of Marketing*, 54 (April), 69-82.

Boulding, W., A. K., Staelin, R., & Zeithaml, A. (1993). A Dynamic Process Model of Service Quality. *Journal of Marketing Research*, 30(February), 7-27

Chandra, Y. U., & Hartono, S. (2018). Analysis factors of technology acceptance of cloud storage: A case of higher education students use Google Drive. *International Conference on Information Technology Systems and Innovation*, Bandung: 22–26 October, 2018. Page 188–192. <https://doi.org/10.1109/ICITSI.2018.8696095>.

Chaveesuk, S., Khalid, B., & Chaiyasoonthorn, W. (2021). Digital payment system innovations: A marketing perspective on intention and actual use in the retail sector. *Innovative Marketing*, 17(3), 109.

Chawla, D., & Joshi, H. (2019). Consumer attitude and intention to adopt mobile wallet in India—An empirical study. *International Journal of Bank Marketing*, 37(7), 1590-1618.

Clemes, M. D., Gan, C., & Zhang, D. (2010), Customer switching behaviour in the Chinese retail banking industry, *Internal journal of bank marketing*, 28(7), 519-546.

Dailysosial. (2023). *Fintech Report*. <https://dailysocial.id/report/post/fintech-report>

Daragmeh, A., Lentner, C., & Sági, J. (2021). Fintech payments in the era of COVID-19: Factors influencing behavioral intentions of “Generation X” in Hungary to use mobile payment. *Journal of Behavioral and Experimental Finance*, 32. <https://doi.org/10.1016/j.jbef.2021.100574>.

Daragmeh, A., Lentner, C., & Sági, J. (2021). FinTech payments in the era of COVID-19: Factors influencing behavioral intentions of “Generation X” in Hungary to use mobile payment. *Journal of Behavioral and Experimental Finance*, 32, 100574.

Daud, I., Nurjannahe, D., Mohyi, A., Ambarwati, T., Cahyono, Y., Haryoko, A. E., ... & Jihadi, M. (2022). The effect of digital marketing, digital finance and digital payment on finance performance of Indonesian smes. *International Journal of Data and Network Science*, 6, 37-44.

Gupta, S. (1988). The Impact of Sales Promotion, When, What and How Much to Buy,” *Journal of Marketing Research*, 25(November), 342-355.

Hair, J. F., Gabriel, M., & Patel, V. (2014). AMOS covariance-based structural equation modeling (CB-SEM): Guidelines on its application as a marketing research tool. *Brazilian Journal of Marketing*, 13(2).

Hasan, A., Yadav, A., Sharma, S., Singhal, A., Gupta, D., Raghuwanshi, S., ... & Verma, P. (2023). Factors Influencing Behavioural Intention to Embrace Sustainable Mobile Payment Based on Indian User Perspective. *Journal of Law and Sustainable Development*, 11(4), e627-e627.

Hong, C. Y., Lu, X., & Pan, J. (2020). *FinTech Adoption and Household Risk-Taking: From Digital Payments to Platform Investments* (No. w28063). National Bureau of Economic Research.

Karim, M. W., Haque, A., Ulfy, M. A., Hossain, M. A., & Anis, M. Z. (2020). Factors influencing the use of E-wallet as a payment method among Malaysian young adults. *Journal of International Business and Management*, 3(2), 1-12.

Keaveney, S. M (1995). Customer Switching Behavior in Service Industries: An Exploratory Study, *Journal of Marketing*, 59 (April), 71-82.

Kurniawan, P., Hartati, W., Qodriah, S., & Badawi, B. (2020). From knowledge sharing to quality performance: The role of absorptive capacity, ambidexterity and innovation capability in creative industry. *Management science letters*, 10(2), 433-442.

Kusuma, H., Muafi, M., & Kholid, M.N. (2023). PRO-ENVIRONMENTAL MSMES PERFORMANCE: THE ROLE OF GREEN IT ADOPTION, GREEN INNOVATIVE BEHAVIOR,

AND FINANCIAL ACCOUNTING RESOURCES. *JOURNAL OF LAW AND SUSTAINABLE DEVELOPMENT*, v.11, p. 1-11.

Kwabena, G.-Y., Qiang, M., Wenyuan, L., Qalati, S. A., & Erusalkina, D. (2019). Effects of the Digital Payment System on Smes Performance in Developing Countries; a Case of Ghana. *EPRA International Journal of Economic and Business Review*, January 2020, 79– 87. <https://doi.org/10.36713/epra2997>

Le, T., & Quang, N. D. (2023). Researching the Effect of Views and Feedback About Products on Customer's Purchase Intention. Case of Shopping on the social media. *International Journal of Professional Business Review: Int. J. Prof. Bus. Rev.*, 8(6), 6.

Maier, E. (2016). Supply and demand on crowdlending platforms: Connecting small and medium-sized enterprise borrowers and consumer investors. *Journal of Retailing and Consumer Services*, 33, 143 – 153.

Malik, A. N. A., & Annuar, S. N. S. (2021). The effect of perceived usefulness, perceived ease of use, reward, and perceived risk toward e-wallet usage intention. In *Eurasian Business and Economics Perspectives: Proceedings of the 30th Eurasia Business and Economics Society Conference* (pp. 115-130). Springer International Publishing.

Munsch, A. (2021). Millennial and generation Z digital marketing communication and advertising effectiveness: A qualitative exploration. *Journal of Global Scholars of Marketing Science*, 31(1), 10-29.

Nikou, S. A., & Economides, A. A. (2017). Mobile-based assessment: Investigating the factors that influence behavioral intention to use. *Computers & Education*, 109, 56–73. <https://doi.org/10.1016/j.compedu.2017.02.005>.

Patel, K. J., & Patel, H. J. (2018). Adoption of internet banking services in Gujarat: An extension of TAM with perceived security and social influence. *International Journal of Bank Marketing*, 36(1), 147–169. <https://doi.org/10.1108/IJBM-08-2016-0104>.

Raharja, S. U. J., Muhyi, H. A., & Herawaty, T. (2020). Digital Payment as an Enabler for Business Opportunities: A Go-Pay Case Study. *Review of Integrative Business and Economics Research*, 9, 319-329.

Rahayu, R. (2022). Factors That Influence the Behavioural Intention to Use E-Payments in Indonesia. *Ekonomis: Journal of Economics and Business*, 6(1), 116-125.

Rahmadhani, S. D., Buchdadi, A. D., Fawaiq, M., & Prasetya, B. A. (2022). Determinants of intention to use e-wallet in generation Z. *BISMA (Bisnis dan Manajemen)*, 15(1), 60–77. <https://doi.org/10.26740/bisma/v15n1.p60-77>

Rehman, A., & Yaqoob, S. (2022). The Pre-Post COVID-19 Higher Educational Sector Perspective: Mediating Role of Intention to Adopt Technological Applications to Determine the Students' Satisfaction. *Journal of Policy Research*, 8(3), 35-45.

Rust, Roland T. and Anthony J. Zahorik (1993). Customer Satisfaction, Customer Retention and Market Share, *Journal of Retailing*, 69, 192-215

Sambandam, R & Lord, K.R. (1995). Switching Behavior in Automobile Markets: A Consideration-Sets Model. *Journal of the Academy of Marketing Science*, 23(1), 57-65.

Sangwan, V., Prakash, P., & Singh, S. (2020). Financial technology: a review of extant literature. *Studies in Economics and Finance*, 37(1), 71-88.

Schmitz, A., Díaz-Martín, A. M., & Yagüe Guillén, M. J. (2022). Modifying UTAUT2 for a cross-country comparison of telemedicine adoption. *Computers in Human Behavior*, 130, 1–11.



<https://doi.org/10.1016/j.chb.2022.107183>.

Senali, M. G., Iranmanesh, M., Ismail, F. N., Rahim, N. F. A., Khoshkam, M., & Mirzaei, M. (2023). Determinants of intention to use e-Wallet: Personal innovativeness and propensity to trust as moderators. *International Journal of Human–Computer Interaction*, 39(12), 2361- 2373.

Setyawati, Y. S., & Polar, D.C. (2022). The Effect of Perceived Usefulness on Behavior Intention To Use Gopay: Mediated by Attitude in Ternate, Indonesia. *Jurnal Akuntansi dan Pajak*, 22(02), 1-14.

Sharma, A., Sharma, S., & Chaudhary, M. (2020). Are small travel agencies ready for digital marketing? Views of travel agency managers. *Tourism Management*, 79, 104078.

Tahar, A., Riyadh, H. A., Sofyani, H., & Purnomo, W. E. (2020). Perceived ease of use, perceived usefulness, perceived security and intention to use e-filing: The role of technology readiness. *The Journal of Asian Finance, Economics and Business (JAFEB)*, 7(9), 537-547.

To, A. T., & Trinh, T. H. M. (2021). Understanding behavioral intention to use mobile wallets in Vietnam: Extending the tam model with trust and enjoyment. *Cogent Business & Management*, 8(1), 1–14. <https://doi.org/10.1080/23311975.2021.1891661>.

Vărzaru, A. A., Bocean, C. G., Rotea, C. C., & Budică-Iacob, A.-F. (2021). Assessing antecedents of behavioral intention to use mobile technologies in e-commerce. *Electronics*, 10(18), 2231. <https://doi.org/10.3390/electronics10182231>.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, 46(2), 186-204.

Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 46(2), 186–204.

Wicaksono, A. R., Maulina, E., Rizal, M., & Purnomo, M. (2023). Technology Accepted Model (TAM): Applications in Accounting Systems. *Journal of Law and Sustainable Development*, 11(5), e547-e547.

Wongkangwan, A. (2022). Factors Influencing Consumers' Intention to Use E-Wallets. In *ICBTS 2022 International Academic Multidisciplines Research Conference in Europe, Proceeding lucern 2022. International conference on Management Science, Innovation and Technology* (pp. 129-135).

Yan, M., Filieri, R., & Gorton, M. (2021). Continuance intention of online technologies: A systematic literature review. *International Journal of Information Management*, 58, 102315.

Yang, M., Mamun, A. A., Mohiuddin, M., Nawawi, N. C., & Zainol, N. R. (2021). Cashless transactions: A study on intention and adoption of e-wallets. *Sustainability*, 13(2), 831.

Ye, C., & Potter, R. (2011). The Role of Habit in Post-Adoption Switching of Personal Information Technologies: An Empirical Investigation. *Communications of the Association for Information Systems*, 28(35), 585 – 610.