



RESEARCH ARTICLE

## Technical Factors Influencing Consumer Digital Payment Preferences in TAR UMT for Online Shopping

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ARTICLE INFO	ABSTRACT
Received: Aug 17, 2024 Accepted: Oct 10, 2024	One of the most pressing challenges in Malaysia's digital payment landscape is the wide variety of platforms, totaling more than 42. This will be a problem, as there is an abundance of options that make it challenging for people to decide which digital payment platform to buy based on their needs. Thus, the aim of this study is to discover the relationship between the intention of behavior to use preferred digital payment method and the usage behavior of preferred digital payment method in the aspect of perceived ease of use, perceived compatibility, perceived convenience, perceived usefulness, and behavioral intention of behavior toward actual use. An online questionnaire survey was used to collect data in TAR UMT and received 105 total responses. Cronbach's alpha is used to measure the reliability of the questionnaire item. Person's correlation and mediation analysis are performed to test the relationship between perceived ease of use, perceived compatibility, perceived convenience, and perceived usefulness using SPSS Macro Process 4.0. The result of this study found a positive relationship between the intention to actual use and the result of the mediation analysis showed that perceived ease of use, perceived compatibility, perceived convenience, and perceived usefulness are a mediating factor in the relationship between the intention of behavior to use the preferred digital payment method and usage behavior of the preferred digital payment method. This research provides insight to researchers, market decision makers, and government policy makers to understand the technical factors on consumers to use digital payment and thus draft effective policies, solutions, and platforms.
<b>Keywords</b>	
Digital Payment Preference	
ease of use	
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## INTRODUCTION

In today's digital marketplace, digital payments have become a popular means to pay for online purchases made. Different digital payments and vendors have since emerged over the years, growing gradually along with the sophistication of online shopping/e-Commerce transactions (Alkhowaiter, 2022; Flavián et al., 2019). Each digital payment method possesses its own distinct features such as functionality, usability, user interface, security, and much more. Therefore, understanding why consumers use certain digital payment methods for online shopping is crucial.

Digital payments are simpler and more convenient than traditional methods, as it saves time and money (Karim et al., 2020). Most payment systems are used for transactions, and payments are being made through various digital payment platforms offered in society, because users consider this method to be better, as it offers a lot of advantages (Gokilavani et al., 2018). Digital payments not only bring clarity and speed, but also give consumers safe transactions anywhere and anytime (Karim et al., 2020). The digital payment offers small scale transitions that are very easy to manage by the users/consumers (Punwatkar & Verghese, 2018).

Due to the increasing number of digital payment platforms, consumers are increasingly transitioning from cash-based transactions to cashless. However, converting a noncash economy is hard, considering how firmly established existing cash-based trading practices are (Yaokumah et al., 2017). Based on the finding from Ipsos (2024), shows that 49% of the Malaysian population are still using Cash while 51% are using non-cash payment. Based on the statistics, it shows that online bank transfer and debit card transactions remain people's choices for digital payments (35%) while E-wallet remains second (26%) and credit card remains last (9%). However, the primary factors driving Malaysia's adoption of digital payments are seamless cash transaction, assurance, and financial savings (Nizam et al., 2018). Malaysia has more than 42 digital payment platforms that have received an official license from BNM (Bank Negara Malaysia) and among them 6 platforms that are widely used are AEON Wallet, Boost, PayLater, GrabPay, Wechat pay, and Touch'n Go eWallet. Although in Malaysia there exist more than 42 digital payment platforms, the percentage of digital payment use is still considered moderate, which is 51% (Ipsos, 2024).

According to Erik Erikson's theory of human development, a young adult is generally defined as someone between 20 and 40 and those between the ages of 13 and 18 are considered adolescents. As new generations emerge, people, especially adolescents / young people, want new applications that are ease of use, security, and privacy (Karim et al., 2020).

This article focuses on why consumers in TAR UMT (aged 18 - 26 above) choose specific digital payment methods based on various technical factors. To meet the special objective of this study, 4 variables such as perceived ease of use (PEU), perceived compatibility (COM), perceived convenience (PC) and perceived usefulness (PU) are chosen to see effectiveness on behavioral intention (BI) and actual use (AU).

### **Problem statement**

Although the e-commerce market in Malaysia is growing rapidly, there are various factors that drive consumers to choose different payment methods when shopping online (Ariffin & Lim, 2020). Examples of digital payment methods available during online checkout are e-wallet, bank card, online banking, pay later, but there are still several factors that drive consumers to choose their payment preferences (Ibrahim & Hussin, 2019). Furthermore, different genders and educational backgrounds will also affect their selection of online payment preferences. Although there are studies on the factors that affect consumer payment preference in the Malaysian market (Karim et al., 2020; Ibrahim & Hussin, 2019) and also university students' preferences on digital payment (Hamzah et al., 2023), there is still a gap in understanding the key factors motivating TAR UMT students to utilize their preferred digital payment method, especially in terms of technical considerations that are perceived ease of use, compatibility, convenience, and usefulness. Furthermore, there is a lack of study to clarify how these technical factors directly influence both the intention to use and the actual use of their preferred digital payment method, as well as the potential mediating role of behavioral intention in this relationship (Ting et al., 2024; Yi et al., 2022).

## **2.0 LITERATURE REVIEW**

### **Perceived ease of use and its impact on behavior intention to use**

Ease of use refers to how straightforward and friendly a system can be operated or interact with. (Shetu et al., 2022). In terms of perceived ease of use, according to Kumala et al. (2020), the characteristics must be simple, which means that if the system is simple and easy to use, the less

effort and frustration it takes for someone to achieve their desired outcome with it. Therefore, perceived ease of use exemplifies the user-friendly nature of using a technology to visit a website and complete a purchase online (Grover et al., 2019). Research shows that perceived ease of use has the potential to strengthen long-term contentment among customers (Singh et al., 2020). The Payment and Clearing Association of China study shows that 95.6% of the population in China uses digital payment due to ease of use (Chen et al., 2019), as digital payment has rapidly turned into a main mode of payment (Ajmera & Bhatt, 2020). Many studies in the past have done research on the ease of digital payments do encourage people to continue use the digital payments (Zegrean & Paraschiv, 2013; Aydn & Burnaz, 2016; De Luna et al., 2019).

### **Perceived compatibility and its impact on behavior intention to use**

Compatibility refers to the degree to which technology fits individuals in terms of desire, lifestyle, and principles (Rahi et al., 2023). People tend to use payment methods that align with their familiar lifestyle (Suebtimrat & Vonguai, 2021). Senali et al. (2022) stated that perceived compatibility will greatly affect consumers' use of the digital payment method. In other words, if the digital payment method fits more with the individual's habits, then it will give them a greater chance to use it (Kaur et al., 2020). According to Yang et al. (2021), better compatibility can help the individual explore new technology with confidence, as there is a close connection between technology and individuals. Letting users feel compatible with digital payment is also very vital, because it will connect them to user groups that use similar payment preferences (Chawla & Joshi, 2020). Various research supports that strong compatibility will also have a positive impact on individuals' behaviors, thereby promoting their intention to use (Shaw & Sergueeva, 2019; Hasan & Gupta, 2020). Tang et al. (2021) claim that one of the key factors in gauging the level of compatibility is looking at how well their preferred payment system integrates into their daily activities. Therefore, compatibility is one of the major indicators to measure the behavior intention to use and it has been proven that it is highly related to digital payment preference (Khan et al., 2021; Jam et al., 2016).

### **Perceived convenience and its impact on the intention of behavior to use**

Convenience serves as a measurement of the time taken and effort that customers used to browse or purchase products. The customers of today prefer merchants that can provide the most time-efficient and convenience based on the digital payment functions offered by the merchant (Saha et al., 2020). One of the key pillars of marketing goods and services is the convenience of digital payment, which has drawn a lot of attention from the literature on customer behavior (Williams, 2021). The development of the Internet has made consumers towards digital payment have a higher demand than conventional payment. In this sense, digital payments are increasingly being recognized as a key element that makes e-commerce transactions successful (Alzoubi et al., 2022). According to Boden et al. (2020), digital payment is the fastest way to finish the checkout procedures, as the cashier does not need to find the changes back to the customers. Therefore, this makes the consumer more likely to use digital payment when checking out at the counter. Based on the results of Liu et al. (2020), when compared to using a credit card, digital payments are much more convenient. Convenience is one of the main benefits of digital payments, as it encourages user acceptance of these methods (Choi et al., 2020). Liébana-Cabanillas et al. (2020) claim that due to the convenience of smartphones, they can pay for their goods and services without carrying cash using smartphones. In summary, convenience is the factor that has the greatest impact on how valuable people perceive digital payments because we can make payments faster when we use our devices with them.

### **Perceived usefulness and its impact on behavior intention to use**

Perceived usefulness refers to a system that is quicker and easier to use in which it can enhance the user's performance (Nguyen, 2020). Customer trust is significantly influenced by payment security, while customer satisfaction, customer trust, and customer continuance intention are all significantly influenced by perceived usefulness. (Phuong et al., 2020). By implementing mobile payment, it offers perceived usefulness to users in achieving task-related goals and boost efficiency in activities. This also facilitates consumers making payments at any place and time through their mobile phones.

(Denaputri & Usman, 2019b). When it comes to mobile payments, PU can help customers in making digital payments efficiently and offer financial advantages such as incentives or discounts that satisfy users (Gupta et al., 2020). The study by (Olivia & Marchyta, 2022) indicates how much continuance intention is influenced by perceived usefulness; so, if technology offers benefits that boost productivity and time efficiency, it will encourage continuance intention.

**Behavior Intention to use and actual use of digital payment**

Behavior intention refers to the degree of the individual's having in mind to utilize the particular technology (Khan & Abideen, 2023). Alkhawaiter (2022) stated that when individuals have a concrete intention to use something, it will become the driving force to engage the individual to actual use it. As acknowledged by (Tan et al., 2019), people’s beliefs are crucial when it comes to predicting whether an individual will perform a specific behavior. Furthermore, Tian et al. (2023) have extensively investigated that the satisfactory intention to use certain technology will positively increase the actual use through a series of studies. To support this statement, many researchers concluded that there is a robust connection between intention to use and actual use (Esawe, 2022; Pal et al., 2020; Patil et al., 2020). Table 1 summarizes the literature review conducted in this study, and it shows that there are various variations and nuances in conceptual frameworks across the 10 sources of articles shown below:

**Table 1: Summary Table of Research Findings**

Source	Dimensions of research variables										
	PEOU	PR	PS	TRU	PCOM	PC	PU	INNO	ATT	BI	AU
Chawla & Joshi, 2020	✓		✓	✓	✓		✓		✓	✓	
Chen et al., 2019		✓			✓	✓				✓	
De Luna et al., 2019	✓		✓				✓		✓	✓	
Karim et al., 2020	✓		✓				✓			✓	✓
Khan, W & Abideen, 2023	✓	✓		✓	✓					✓	✓
Senali et al., 2022	✓	✓		✓	✓		✓	✓		✓	
Shetu et al., 2022	✓		✓		✓		✓	✓		✓	✓
Tang et al., 2021	✓	✓	✓		✓					✓	
Williams et al., 2021	✓	✓		✓		✓	✓			✓	
Yang et al., 2021	✓			✓	✓		✓			✓	✓

Notes: PEOU = Perceived ease of use, PR = Perceived Risk, PS = Perceived Security, PCOM = Perceived Compatibility, PC = Perceived Convenience, PU = Perceived Usefulness, ATT = Attitude, BI = Behavior Intention, AU = Actual Use

Based on the literature review in Table 1, it is evident that 4 of 11 researchers (Karim et al., 2020; Khan & Abideen, 2023; Yang et al., 2021; Shetu et al., 2022; Hong et al., 2024) conclude that behavioral intention significantly influences actual use and only one research conducted in Malaysia shows that behavior intention does influence actual use among young Malaysians (Karim et al., 2020; Jam et al., 2012). Considering that there are only 4 studies that show behavioral intention does affect actual use, it is notable that the remaining 7 papers do not cover behavioral intention to actual use. Table 2 shows that other researchers have different mediators and there are only 2 papers (Karim et al., 2022 and Yang et al., 2021) whose mediator (behavior intention) is the same as in our study.

**Table 2: Summary table of the mediation findings**

Source	Mediator chosen						
	PU	PR	TRU	PC	INNO	ATT	BI
Chawla & Joshi, 2020	✓		✓			✓	
Karim et al., 2020							✓
Khan, W & Abideen, 2023		✓					
Senali et al., 2022			✓		✓		

Shetu et al., 2022					✓		
Williams et al., 2021				✓	✓		
Yang et al., 2021							✓

Notes: PU = Perceived Usefulness, PR = Perceived Risk, TRU = Trust, PC = Perceived Convenience, ATT = Attitude, BI = Behavior Intention, INNO = Innovation

In conclusion, there are only 4 papers that cover behavioral intention to actual use, and there are only 2 papers that show behavior intention as a mediator to investigate the relationship between technical factors and actual use. As in other papers, other researchers stopped at the intent of behavior and did not proceed to actual use. So, there exists a research gap in understanding the relationship between behavioral intention and actual use. In this study, we will study the relationship between the technical factors that will affect the actual use of digital payment methods by the university student and the mediating effect of the intention between them (Figure 1).

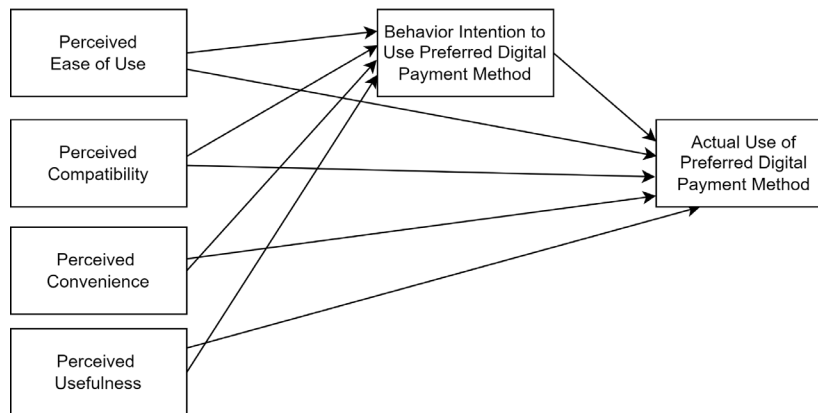


Figure 1: Conceptual framework of this study

### 3.0 RESEARCH METHODOLOGY

#### 3.1 Population

The questionnaire was used to collect data related to factors influencing consumer digital payment preferences in TAR UMT. The questionnaire is designed and structured using Google Forms. The questionnaire was distributed to students of TAR UMT from various demographics such as different age groups, gender, and different levels of experience with digital payment platforms. The questionnaire was sent from 28 March 2024 to 4 May 2024. The questionnaire was distributed through social media such as WhatsApp, XHS, and emails.

In this study, a total of 105 respondents participated in answering this questionnaire. These respondents were exclusively TAR UMT students. Convenience sampling was used to select students from the TAR UMT as respondents. This sampling technique allows us to access the respondents conveniently within the university campus area. The questionnaire is divided into seven sections to gather information on various factors that could influence the decision to choose their digital payment preferences. Section 1 is demographic information (4 items) including their age, gender, what digital payment method they use, and how often they use their selected payment method; all 4 items in this section are nominal questions. Sections 2 to 7 are divided into 6 categories: Ease of use (3 items), perceived compatibility (3 items), perceived convenience (5 items), perceived usefulness (3 items), behavior intention to use (3 items) and actual use (4 items). All the items in Sections 2 to 7 are designed with a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). Strongly agree is measured as the respondent’s agreement or satisfaction with the statement, while strongly disagree means the respondent is not satisfied or does not agree with the statement. Table 3 shows all the questions in this study.

**Table 3: Questionnaire Items and Its Reference Resources**

Item	Questionnaire items	Source
<b>Demographic</b>		
	Age? Option: 18 – 21; 22 – 25; 26 and above Gender? Option: Male; Female What digital payment method do you use when shopping online? Option: E-wallet; Online Banking (FPX); Bank Card; Pay Later How often do you use the digital payment method you selected in the previous question when online shopping? Option: Less than 3 times per month; Between than 4 - 5 times per month; Between than 6 - 8 times per month; More than 9 times per month	-
<b>Perceived Ease Of Use (EOU)</b>		
EOU1	I believe that using my preferred digital payment method will ensure a clear and understandable process.	Madugoda et al., 2022
EOU2	I believe that it is easy for me to become skillful at using my preferred digital payment method.	
EOU3	I feel that my preferred digital payment method is easy to use.	
<b>Perceived Compatibility (COM)</b>		
COM1	The use of my preferred digital payment method fits well with my lifestyle.	Agardi et al., 2022
COM2	My preferred digital payment method is consistent with the way I like to buy products and services.	
COM3	I would appreciate using my preferred digital payment method over other kinds of payment methods.	
<b>Perceived Convenience (C)</b>		
C1	My preferred digital payment method is flexible.	Saha et al., 2020
C2	My preferred digital payment method check-out process is fast.	
C3	My preferred digital payment method makes my purchase completed easily.	
C4	My preferred digital payment method did not take a long time to complete the purchase process.	
C5	My preferred digital payment method makes me feel safe to provide my personal and private data.	
<b>Perceived Usefulness (U)</b>		
U1	I believe payments can be successfully completed using my preferred digital payment method.	Balakrishnan et al., 2022
U2	My preferred digital payment method enables me to make payment efficiently.	
U3	Using my preferred digital payment method would help me to manage my expenses better.	
<b>Behavior Intention (BI)</b>		
BI1	I will always try to use my preferred digital payment method in my daily life.	Patil et al., 2020
BI2	I plan to use my preferred digital payment method frequently.	
BI3	I will recommend others to use my preferred digital payment method.	
<b>Actual Use (AU)</b>		
AU1	I use my preferred digital payment method.	Patil et al., 2020
AU2	I pay for purchase using my preferred digital payment method.	
AU3	I use my preferred digital payment method for transferring money to my family, friends and/or other contacts.	
AU4	I use my preferred digital payment method when doing online shopping.	

All the data collected through the distributed questionnaire will be analyzed by using SPSS software. First, all the questionnaire items will be conducted by Cronbach Alpha to evaluate the internal consistency and reliability of the scales used in the questionnaire. All the sections (excluding Demographic section) and the entire questionnaire must be achieved more than 0.7 to be considered acceptable to include the items in the questionnaire. Next, descriptive statistics will be conducted for both demographic characteristics and digital payment preferences. This section will show the frequency distribution of the respondents in terms of gender and age, while another part will present the frequency distribution of respondent's preferred digital payment methods and different levels of experience in using them. Furthermore, to test the layer 2 hypothesis, which is H1, H3, H5, H7 and

H9, we will conduct the bivariate correlation (Pearson correlation) by using SPSS. At the same time, to test the layer 3 hypothesis, which is H2, H4, H6 and H8, we will conduct the mediating analysis by using SPSS and Process Macro. This will assess the role of intention to use as a mediator between technical factors and the actual use of preferred digital payment methods. To conduct these two hypothesis tests, we will calculate the mean of the items in each section of the questionnaire so that the respective sections can be combined into one variable.

## 4.0 RESULTS AND DISCUSSIONS

### 4.1 Reliability analysis

Cronbach's alpha is used to assess the internal consistency and reliability of the Likert scale questionnaire, which is suitable for this study. To ensure the questionnaire is consistent and reliable, Cronbach's alpha results must be greater than 0.7 to be considered acceptable. In this questionnaire, each of the sections scored above 0.7 (Table 4), which means that all sections achieved internal consistency and reliability. Furthermore, considering the entire questionnaire, the overall Cronbach alpha coefficient was calculated to be 0.939. This extremely high value indicated the excellent internal consistency and reliability of the questionnaire to carry out the study.

**Table 4: Cronbach Alpha for Questionnaire Items**

Section	Number of Questions	Cronbach's Alpha
Perceived Ease of Use (EOU)	3	0.702
Perceived Compatibility (COM)	3	0.816
Perceived Convenience (C)	5	0.844
Perceived Usefulness (U)	3	0.750
Behavior Intention (BI)	3	0.711
Actual Use (AU)	4	0.800
Overall	21	0.939

### 4.2 Descriptive Statistics

Most of the respondents' age range between 18 and 21, constituting 55.2% of the sample (n = 58). The second proportion of the age range was 22 - 25, constituting 40% of the sample (n = 42). There are some respondents who are 26 years old and older, which is 4.8% of the sample (n = 5). Furthermore, in terms of gender distribution, 46.7% of respondents are male (n = 49), while 53.3% are female (n = 56). The most popular digital payment preference for online shopping among respondents is online banking (FPX), representing 52.4% of respondents (n = 55). Although e-wallet was the second most preferred option, representing 32.4% of respondents (n = 34) as well as bank cards were the second least preferred option, with only 11.4% of respondents (n = 12) choosing this method. Pay Later is the least preferred option, with only 3.8% of respondents (n = 4) selecting this method (Table 5).

**Table 5: Descriptive Statistics of Demographic Characteristics and Digital Payment Preferences**

Characteristics	Frequency (n)	Valid Percentage (%)
<b>Age</b>		
18 - 21	58	55.2
22 - 25	42	40.0
26 and above	5	4.8
<b>Gender</b>		
Male	49	46.7
Female	56	53.3
<b>Choice of digital payment preferred when online shopping</b>		
Bank Card	12	11.4
E-wallet	34	32.4

Online Banking (FPX)	55	52.4
Pay Later	4	3.8
<b>Frequency to use preferred digital payment method</b>		
Less than 3 times per month	33	31.4
Between 4 - 5 times per month	34	32.4
Between 6 - 8 times per month	20	19.0
More than 9 times per month	18	17.1

At the same time, most respondents (32.4%, n=34) reported using their preferred digital payment between 4 and 5 times per month. After that, respondents who use digital payment less than 3 times per month is (31.4%, n=33). Next, a smaller proportion of respondents use their preferred digital payment between 6 - 8 times a month (19%, n=20). The least respondents (17.1%, n=18) used their digital payment more than 9 times per month.

### 4.3 Hypothesis testing

Table 6 shows the descriptive statistics (mean and standard deviation) and Pearson correlation for the independent variables and the dependent variables. For the Pearson correlation, since all the results show that the significance level is < .001, H1, H3, H5, H7, and H9 are accepted in this study because sig. < 0.05. This result is consistent with many previous studies shown in Table 8.

**Table 6: Pearson correlation analyzes for hypothesis testing**

		BI	AU	SD	Hypothesis
<b>EOU</b>	Pearson Correlation	.473**	-	.664	H1: Accepted
<b>COM</b>	Pearson Correlation	.621**	-	.791	H3: Accepted
<b>C</b>	Pearson Correlation	.655**	-	.694	H5: Accepted
<b>U</b>	Pearson Correlation	.666**	-	.785	H7: Accepted
<b>BI</b>	Pearson Correlation	-	.679**	.748	H9: Accepted

Note: SD = Standard Deviation; \*\* Correlation is significant at the 0.01 level (2-tailed).

### Mediating Analysis

Based on Table 7 it is shown that Direct Effects (DE) and Indirect Effect (IE) with a bootstrap 95% confidence interval for mediation analysis of behavior intention regarding predictors and actual use. Through the mediation analysis, the intention of behavior was found to be a significant mediator when predictors are ease of use (IE=.2534) with very high significant level ( $p < 0.001$ ), Compatibility (IE=.3145) with a high significant level ( $p < 0.01$ ), Convenience (IE=.2699) with a very high significant level ( $p < 0.001$ ) and usefulness (IE=.3128) with a high significant level ( $p < 0.001$ ). Therefore, H2, H4, H6, and H8 are accepted.

**Table 7: Table of direct and indirect effects for mediation analysis**

Predictor	Mediator	DV	DE(LLCI, ULCI)	IE(BootLLCI, BootULCI)	Hypothesis
EOU	BI	AU	.3306** (.1648, .4963)	.2534** (.1408, .3745)	H2: Accepted
COM	BI	AU	.2545* (.0941, .4149)	.3145** (.1721, .4780)	H4: Accepted
C	BI	AU	.4249** (.2446, .6051)	.2699** (.1363, .4054)	H6: Accepted
U	BI	AU	.2896** (.1212, .4579)	.3128** (.1656, .4446)	H8: Accepted

Note: DV = dependent variable; DE=Direct Effect; IR=Indirect Effect; \* $p < 0.01$ ; \*\* $p < 0.001$

In this study, all hypotheses were accepted, further supporting the consistent trends observed among other researchers' findings as summarized in Table 8. According to our study, perceived Ease of Use



(EOU) and intention of use behaviors (BI) showed a strong positive relationship. Customers have been shown to like to use digital platforms that are easy to navigate and use. Clear and meaningful instructions, an intuitive and consistent design, and an easy-to-use interface will contribute to customers' overall digital payment experiences. This study aligns with Daragmeh et al. (2021) research result. Furthermore, perceived compatibility (COM) represents a highly positive relationship with the intention to use (BI). This shows that consumers tend to use digital payment methods that are highly compatible with their current needs, expectations, habits, and lifestyles. This finding aligns with many previous studies (Kaur et al., 2020; Hasan & Gupta, 2020; Suebtimrat & Vonguai, 2021; Rahi et al., 2023). In addition, the findings showed a strong positive correlation between perceived convenience (C) and intention to use (BI). Convenience is one of the most important factors affecting customers choosing their digital online preference. Customers who want convenience in their online shopping when making payments tend to favor services that offer fast transactions, easy access, and simplified procedures that reduce time and effort. This study is consistent with Pal et al. (2020); Chen et al. (2019); and Boden et al. (2020). Furthermore, another important indicator of the intention to use (BI) was found to be perceived usefulness (U). Customers are more willing to accept the digital online preferences that they believe are worthwhile and beneficial. Customers tend to choose digital platforms with useful features, relevant materials, and special suggestions that meet the user's taste. This study is consistent with Gupta et al. (2020); Denaputri & Usman (2019); and De Luna et al. (2019). Lastly, there was a significant positive link between behavioral intention (BI) and actual use (AU). This implies a strong correlation between consumers' desire for digital services in general and their intention to interact with them. A higher probability of future adoption and sustained participation is indicated by positive attitudes and intentions toward the use of digital platforms. This study shows that it is aligned with Esawe (2022); Patil et al. (2020); and Tian et al. (2023).

**Table 8: The results of other researchers were summarized as consistent or inconsistent.**

Source	H1	H2	H3	H4	H5	H6	H7	H8	H9
Shetu et al., 2022	✓		✓				✓		
Yang et al., 2021	✓	✓	✓	✓			✓	✓	✓
Khan et al., 2021			✓						✓
Khan, W & Abideen, 2023	✓		✓				✓		✓
Chawla et al., 2020			✓				✓		
Williams et al., 2021	✓				✓		✓		
Pal et al., 2020					✓				✓
Phuong et al., 2020	✓						✓		
Chen et al., 2019			✓		✓				
Olivia & Marchyta, 2022	✓						✓		
Singh et al., 2020	✓						✓		
Williams, 2021	✓				✓		✓		
Daragmeh et al., 2021	✓						✓		
Karim et al., 2020	✓						✓		✓

Note: ✓ = consistent

In this study, we discovered the research gap that was found in the literature review, which is a lack of research on behavior intention to actual use and lack of chosen behavior intention as the mediator to study the relation between technical factors and actual use. In our study, the relationship between behavior intention to actual use is evident that there is a significant relationship between them, we took behavior intention as our mediator variable and found out that it is also significant relationship with actual use.

## 5.0 CONCLUSION

This research focuses on technical factors influencing consumer digital payment preference in TAR UMT for online shopping. The aspects included in this research are perceived ease of use, perceived compatibility, perceived convenience, perceived usefulness, behavioral intention, and actual use. Data were collected from respondents aged 18 - 26 years old and above in TAR UMT. Findings reveal that there is a strong positive relation between the technical factors (i.e. perceived ease of use, perceived compatibility, perceived convenience, perceived usefulness), behavior intention, and actual use with the factors of choosing payment methods during online shopping.

Based on our research study, we are collecting our data to investigate the preference of digital payment methods within the population of TAR UMT. It is important to note that our findings may not fully represent the diversity of digital payment preferences in Malaysia, which represents one of the limitations of our research. Future research can expand the scope of research to carry out research that covers other Malaysian universities or the whole country so that they can discover more accurate statistics and insights through the study of technical factors influencing consumer digital payment preferences.

The other researchers can take references and use these results to discover evidence-based research to fully understand the technical factors on consumers to choose different online payment options in different situations. Furthermore, the market decision maker for e-Commerce platforms in Malaysia can understand the payment behavior better so that the platform can make a precise decision on the payment methods during checkout. Furthermore, this research also enables government policy makers to better understand Malaysian residents' preferences regarding online payment methods. This allows them to develop more effective policies and subsidies to meet the needs of the Malaysian people.

## 6.0 REFERENCES

- Ajmera, H., & Bhatt, V. (2020). Factors affecting the consumer's adoption of E-wallets in India: An empirical study. *Alochana Chakra J*, 9(6), 1081-1093. <https://www.researchgate.net/profile/Viral-Bhatt/publication/343041661>
- Alkhowaiter, W. A. (2022). Use and behavioral intention of m-payment in GCC countries: Extending meta-UTAUT with trust and Islamic religiosity. *Journal of Innovation & Knowledge*, 7(4), 100240. <https://doi.org/10.1016/j.jik.2022.100240>
- Alzoubi, H. M., Alshurideh, M., Kurdi, B. A., Alhyasat, K. M. K., & Ghazal, T. M. (2022). The effect of e-payment and online shopping on sales growth: Evidence from banking industry. *International Journal of Data and Network Science*, 6(4), 1369-1380. <https://doi.org/10.5267/j.ijdns.2022.5.014>
- Ariffin, S. K., & Lim, K. T. (2020). Investigating Factors Affecting Intention to Use Mobile Payment Among Young Professionals in Malaysia. *Advances in Economics, Business and Management Research*. <https://doi.org/10.2991/aebmr.k.200514.002>
- Aydın, G., & Burnaz, Ş. (2016). Adoption of mobile payment systems: a study on mobile wallets. *Journal of Business, Economics and Finance*, 5(1), 73. <https://doi.org/10.17261/pressacademia.2016116555>
- Boden, J., Maier, E., & Wilken, R. L. (2020). The effect of credit card versus mobile payment on convenience and consumers' willingness to pay. *Journal of Retailing and Consumer Services*, 52, 101910. <https://doi.org/10.1016/j.jretconser.2019.101910>
- Chawla, D., & Joshi, H. (2020). Role of Mediator in examining the influence of antecedents of mobile wallet adoption on attitude and intention. *Global Business Review*, 24(4), 609-625. <https://sci-hub.se/10.1177/0972150920924506>
- Chen, W., Chen, C., & Chen, W. (2019). Drivers of mobile payment acceptance in China: an empirical investigation. *Information*, 10(12), 384. <https://doi.org/10.3390/info10120384>

- Choi, H., Park, J., Kim, J., & Jung, Y. (2020). Consumer preferences of attributes of mobile payment services in South Korea. *Telematics and Informatics*, 51, 101397. <https://doi.org/10.1016/j.tele.2020.101397>
- 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 Behavioural and Experimental Finance*, 32, 100574. <https://doi.org/10.1016/j.jbef.2021.100574>
- De Luna, I. R., Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2019). Mobile payment is not all the same: The adoption of mobile payment systems depending on the technology applied. *Technological Forecasting & Social Change/Technological Forecasting and Social Change*, 146, 931–944. <https://doi.org/10.1016/j.techfore.2018.09.018>
- Denaputri, A., & Usman, O. (2019). Effect of perceived trust, perceived security, perceived usefulness and perceived ease of use on customers' intention to use mobile payment. *Perceived Security, Perceived Usefulness and Perceived Ease of Use on Customers' Intention to Use Mobile Payment (December 16, 2019)*. <https://doi.org/10.2139/ssrn.3511632>
- Esawe, A. (2022). Understanding mobile e-wallet consumers' intentions and user behavior. *Spanish Journal of Marketing - ESIC*, 26(3), 363–384. <https://doi.org/10.1108/sjme-05-2022-0105>
- Gokilavani, R., Venkatesh Kumar, D., Durgarani, M., & Mahalakshmi, R. (2018). Can India move towards digital sovereign currency? A study on perception of consumers towards digital payment. *International Journal of Pure and Applied Mathematics*, 119(17), 2167-2175. <https://acadpubl.eu/hub/2018-119-17/2/179.pdf>
- Grover, P. S., Kar, A. K., Janssen, M., & Ilavarasan, P. V. (2019). Perceived usefulness, ease of use and user acceptance of blockchain technology for digital transactions – insights from user-generated content on Twitter. *Enterprise Information Systems*, 13(6), 771–800. <https://doi.org/10.1080/17517575.2019.1599446>
- Gupta, A., Yousaf, A., & Mishra, A. (2020). How pre-adoption expectancies shape post-adoption continuance intentions: An extended expectation-confirmation model. *International Journal of Information Management*, 52, 102094. <https://doi.org/10.1016/j.ijinfomgt.2020.102094>
- Hamzah, N. H., Ibrahim, N. S., Ibrahim, N. B., Mohamed Zukri, S., Mohd Fauzi, N. Z., & Azizan, N. H. (2023). A multiple linear regression in determining the influential factors of cashless payment adoption among university students. *Journal of Mathematics and Computing Science*, 9(2), 159-170. <https://ir.uitm.edu.my/id/eprint/89058/1/89058.pdf>
- Hasan, A., & Gupta, S. (2020). Exploring tourists' behavioural intentions towards use of select mobile wallets for digital payments. *Paradigm*, 24(2), 177–194. <https://doi.org/10.1177/0971890720959519>
- Hong, T., & Ruangchoengchum, P. (2024). Analyzing the Impact of Performance Metrics on Profitability: A Case Study of SMEs in Cambodian Food, Beverage, and Tobacco Industries. *Pakistan Journal of Life and Social Sciences. E-ISSN*, 2221-7630.
- Ipsos. (2024, January 11). [PRESS RELEASE] - Non-Cash Economy & Payment Evolution. Ipsos. <https://www.ipsos.com/en-my/press-release-non-cash-economy-payment-evolution>
- Jam, F. A., Haq, I. U., & Fatima, T. (2012). Psychological contract and job outcomes: Mediating role of affective commitment. *Journal of Educational and Social Research*, 2(4), 79-79.
- Jam, F. A., Singh, S. K. G., Ng, B., & Aziz, N. (2016). Interactive effects of Gender and Leadership Styles on Open Service Innovation: A Study of Malaysian Doctors, *International Journal of Economics Research*, 13(3), 1287-1304.
- 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. <http://dx.doi.org/10.37227/jibm-2020-2-21>
- Kaur, P., Dhir, A., Bodhi, R., Singh, T., & Almotairi, M. (2020). Why do people use and recommend m-wallets? *Journal of Retailing and Consumer Services*, 56, 102091. <https://doi.org/10.1016/j.jretconser.2020.102091>

- Khan, N. A., Khan, A., Bahadur, W., & Ali, M. (2021). Mobile payment adoption: a multi-theory model, multi-method approach and multi-country study. *International Journal of Mobile Communications*, 19(4), 467. <https://doi.org/10.1504/ijmc.2021.116119>
- Khan, W., & Abideen, Z. U. (2023). Effects of behavioural intention on usage behaviour of digital wallet: the mediating role of perceived risk and moderating role of perceived service quality and perceived trust. *Future Business Journal*, 9(1). <https://doi.org/10.1186/s43093-023-00242-z>
- Kumala, D. C., Pranata, J. W., & Thio, S. (2020). Pengaruh perceived usefulness, perceived ease of use, trust, dan security terhadap minat penggunaan gopay pada generasi x di surabaya. *Jurnal Manajemen Perhotelan*, 6(1), 19-29. <https://doi.org/10.9744/jmp.6.1.19-29>
- Liébana-Cabanillas, F., García-Maroto, I., Muñoz-Leiva, F., & De Luna, I. R. (2020). Mobile payment adoption in the age of digital transformation: the case of Apple Pay. *Sustainability*, 12(13), 5443. <https://doi.org/10.3390/su12135443>
- Liu, Y., Luo, J., & Zhang, L. (2020). The effects of mobile payment on consumer behavior. *Journal of Consumer Behaviour*, 20(3), 512–520. <https://doi.org/10.1002/cb.1880>
- Mombeuil, C., & Uhde, H. (2021). Relative convenience, relative advantage, perceived security, perceived privacy, and continuous use intention of China's WeChat Pay: A mixed-method two-phase design study. *Journal of Retailing and Consumer Services*, 59, 102384. <https://doi.org/10.1016/j.jretconser.2020.102384>
- Nguyen, O. T. (2020). Factors affecting the intention to use digital banking in Vietnam. *The Journal of Asian Finance, Economics and Business*, 7(3), 303–310. <https://doi.org/10.13106/jafeb.2020.vol7.no3.303>
- Nizam, F., Hwang, H. J., & Valaei, N. (2019). Measuring the effectiveness of E-wallet in Malaysia. *Big Data, Cloud Computing, Data Science & Engineering 3*, 59-69. [https://doi.org/10.1007/978-3-319-96803-2\\_5](https://doi.org/10.1007/978-3-319-96803-2_5)
- Olivia, M., & Marchyta, N. K. (2022). The influence of perceived ease of use and perceived usefulness on E-Wallet continuance intention. *Jurnal Teknik Industri: Jurnal Keilmuan Dan Aplikasi Teknik Industri*, 24(1), 13–22. <https://doi.org/10.9744/jti.24.1.13-22>
- Pal, A., Herath, T., Dé, R., & Rao, H. R. (2020). Is the Convenience Worth the Risk? An Investigation of Mobile Payment Usage. *Information Systems Frontiers*, 23(4), 941–961. <https://doi.org/10.1007/s10796-020-10070-z>
- Patil, P. P., Tamilmani, K., Rana, N. P., & Raghavan, V. (2020). Understanding consumer adoption of mobile payment in India: Extending Meta-UTAUT model with personal innovativeness, anxiety, trust, and grievance redressal. *International Journal of Information Management*, 54, 102144. <https://doi.org/10.1016/j.ijinfomgt.2020.102144>
- Phuong, N. T., Luan, L. T., Van Dong, V., & Khanh, N. L. N. (2020). Examining Customers' Continuance Intentions towards E-wallet Usage: The Emergence of Mobile Payment Acceptance in Vietnam. *The Journal of Asian Finance, Economics and Business*, 7(9), 505–516. <https://doi.org/10.13106/jafeb.2020.vol7.no9.505>
- Punwatkar, S., & Verghese, M. (2018). Adaptation of e-wallet payment: an empirical study on consumers' adoption behavior in central india. *International Journal of Advanced in Management, Technology and Engineering Sciences*, 8(3), 1147-1156. <https://www.ijamtes.org/gallery/154%20conf-mba.pdf>
- Rahi, S., Alghizzawi, M., & Ngah, A. H. (2023). Understanding consumer behavior toward adoption of e-wallet with the moderating role of pandemic risk: an integrative perspective. *Kybernetes*. <https://doi.org/10.1108/k-10-2022-1431>
- Saha, S. K., Duarte, P., Silva, S. C. E., & Zhuang, G. (2020). Supporting sustainability by promoting online purchase through enhancement of online convenience. *Environment, Development and Sustainability*, 23(5), 7251–7272. <https://doi.org/10.1007/s10668-020-00915-7>
- See, Y. L. (2024). *The Determinants That Affecting University Student Mobile Payment Adoption Intention in Malaysia* (Doctoral dissertation, Tunku Abdul Rahman University of Management and Technology). <https://eprints.tarc.edu.my/id/eprint/27541>

- Senali, M. G., Iranmanesh, M., Ismail, F. N., Rahim, N. F. A., Khoshkam, M., & Mirzaei, M. (2022). 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. <https://doi.org/10.1080/10447318.2022.2076309>
- Shaw, N., & Sergueeva, K. (2019). The non-monetary benefits of mobile commerce: Extending UTAUT2 with perceived value. *International Journal of Information Management*, 45, 44–55. <https://doi.org/10.1016/j.ijinfomgt.2018.10.024>
- Shetu, S. N., Islam, M. M., & Promi, S. I. (2022). An empirical investigation of the continued usage intention of digital wallets: The moderating role of perceived technological innovativeness. *Future Business Journal*, 8(1). <https://doi.org/10.1186/s43093-022-00158-0>
- Singh, N., Sinha, N., & Liébana-Cabanillas, F. (2020). Determining factors in the adoption and recommendation of mobile wallet services in India: Analysis of the effect of innovativeness, stress to use and social influence. *International Journal of Information Management*, 50, 191–205. <https://doi.org/10.1016/j.ijinfomgt.2019.05.022>
- Suebtimrat, P., & Vonguai, R. (2021). An investigation of behavioral intention towards QR code payment in Bangkok, Thailand. *Journal of Asian Finance, Economics and Business*, 8(1), 939–950. <https://doi.org/10.13106/jafeb.2021.vol8.no1.939>
- Tan, K., Memon, M. A., Sim, P., Leong, C. M., Soetrisno, F., & Hussain, K. (2019). Intention to use mobile payment system by ethnicity: a partial least squares multi-group approach. *Asian Journal of Business Research*, 9(1). <https://doi.org/10.14707/ajbr.190055>
- Tang, Y. M., Chau, K. Y., Hong, L., Ip, Y. K., & Yan, W. K. (2021). Financial Innovation in Digital Payment with WeChat towards Electronic Business Success. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(5), 1844–1861. <https://doi.org/10.3390/jtaer16050103>
- Tian, Y., Chan, T. J., Suki, N. M., & Kasim, M. A. (2023). Moderating Role of Perceived Trust and Perceived Service Quality on Consumers' Use Behavior of Alipay e-wallet System: The Perspectives of Technology Acceptance Model and Theory of Planned Behavior. *Human Behavior and Emerging Technologies*, 2023, 1–14. <https://doi.org/10.1155/2023/5276406>
- Ting, T. T., Lee, S. C., Wee, M. C., & Chaw, J. K. (2024). Romantic relationship patterns, detailed covariates, and impacts on education: A study on young adults in the US using ICPSR dataset. *Global Social Welfare*, 11(2), 151–163. <https://doi.org/10.1007/s40609-022-00254-7>
- Williams, M. D. (2021). Social commerce and the mobile platform: Payment and security perceptions of potential users. *Computers in Human Behavior*, 115, 105557. <https://doi.org/10.1016/j.chb.2018.06.005>
- Yang, M., Mamun, A. A., Mohiuddin, M., Nawli, N. C., & Zainol, N. R. (2021). Cashless Transactions: A study on Intention and adoption of e-Wallets. *Sustainability*, 13(2), 831. <https://doi.org/10.3390/su13020831>
- Yaokumah, W., Kumah, P., & Okai, E. S. A. (2017). Demographic influences on E-Payment services. *International Journal of E-business Research*, 13(1), 44–65. <https://doi.org/10.4018/ijebr.2017010103>
- Yi, A. C. Y., Ying, T. K., Yee, S. J., Chin, W. M., & Tin, T. T. (2022). InPath Forum: A Real-Time Learning Analytics and Performance Ranking Forum System. *IEEE Access*, 10, 128536–128542. <https://doi.org/10.1109/ACCESS.2022.3227430>
- Zegrean, P., & Paraschiv, D. (2013). Enhancing the perceived value of mobile marketing. A Romanian case study. *Economics & Sociology*, 6(1), 72–77. [https://economics-sociology.eu/files/11\\_Patrycia.pdf](https://economics-sociology.eu/files/11_Patrycia.pdf)