

**Towards a cashless society: Use of electronic payment devices among generation Z**

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Nowadays, transactions on e-commerce platforms (e-payment) utilizing a credit card are popular. Using credit cards for electronic purchases over the Internet is much different from offline purchases in traditional stores; only online transactions do not include either physical credit card or a signature. The e-payment has become a common mode of payment for online transactions made. It is an electronic billing system that gives clients the ability to make payments using the Internet. The objective of this paper was to analyze the associations among continuance intention e-payment, effort expectancy, facilitating conditions, performance expectancy, social influence, and actual usage of e-payment. The data was tested empirically on data collected from 667 Generation Z e-payment users in Malaysia. The results found that facilitating conditions, performance expectancy, and social influence impacted the actual usage of e-payment. Surprisingly, effort expectancy was not significantly associated with the actual e-payment usage. The findings of this study have several implications for managers and point the way towards future research. No prior empirical study has investigated the role of the Unified Theory of Acceptance and Use of Technology model on e-payment usage among Generation Z in Malaysia to the best of the authors' knowledge. These results provide valuable contributions that can help decision-makers formulate or adjust their strategies associated with e-payments.

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**1. Introduction**

Knowing the impacts that technological advances cause in people's everyday lives has sparked the attention of many scholars in the social sciences (de Sena Abrahão et al., 2016). Advances in technology have also created a wide variety of different functionalities for mobile apps, enabling several mobile financial applications like bill paying, wallet transactions, person-to-person transactions, point-of-sale proximity payments, online payments for purchases of products and services, and other services like location-based services, mobile ads, ticketing, promotions or co-operative services (Oliveira et al., 2017). The explosive rise of communication and information technologies has brought the world into a new age of intangible ways that enable online payments (Acheampong et al., 2017). In addition, the increasing usage of social networks like Facebook,

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LinkedIn, and Twitter has created possibilities for new business models in the online commerce sector, also referred to as social trade (Liébana-Cabanillas et al., 2018).

Today, e-payment has become a common mode of payment for online transactions made (Teoh et al., 2013). E-payment is an electronic billing system giving clients the ability to make payments using the Internet (Tella & Olasina, 2014). Transactions on e-commerce platforms utilizing a credit card are popular today (Kurniawati et al., 2020). Using credit cards for electronic purchases over the Internet is much different from offline purchases in traditional stores (Fedorko et al., 2018) because online transactions do not require either a physical credit card or a signature card (Junadi, 2015). Like payment patterns in other nations, Malaysia's payment environment has also shifted and developed over the past decades, with more accelerated recent changes due to globalization and technical advancement (Lee et al., 2013; Muhammad et al., 2019).

According to Herrando et al. (2019), Generation Z applies to the younger group, born between 1991 and 2000. Encouraging this generation to use their own technology is also essential (Shatto & Erwin 2017). Generation Z is sometimes called the "generation of the internet." The individuals of this group are members of various networks, which are often distinct from previous generations (Ozkan & Solmaz 2015). Hence, investigating the continuance usage behavior of e-payment users in this generation is significant for researchers and practitioners.

Since 2017, the importance of continuance intention research has increased noticeably among scholars (Cao & Niu, 2019; Garcia et al., 2019; Huang, 2020; Ofori et al., 2017). Continuance intention is the willingness of the users to focus on using an application related to technology like mobile money transfer services. Actual use refers to the transition from a user's purpose in using a service to when a user utilizes a technology (Mensah et al., 2020). For instance, users accustomed to booking hotels via online reservation websites and accessing such websites daily are often called users who utilize online reservations on an ongoing basis. This trend may be viewed as a post-acceptance stage in the diffusion model of innovation, where users have embraced, started to use, or even injected the technology (Cho et al., 2009). Previous studies have examined continuance intention in various Internet environments (Asnakew, 2020; Choi et al., 2019; Khwaldeh, 2020; Mensah et al., 2020), but the current study focuses on e-payment usage research.

This current study makes two primary contributions to the research on e-payment usage. First, unlike prior studies that have been concerned primarily with the use of mobile payments and online banking (Chaouali et al., 2016; Poromatikul et al., 2019), this study focuses on the use of e-payment by users and utilizes the UTAUT model to investigate the continuance intention of e-payment users. This focus deepens the comprehension of e-payment continuance usage behavior. Second, this research extends the UTAUT model in understanding the drivers ensuring the success of e-payment devices. Exploring these factors is essential, especially in the Malaysian environment, given the exciting innovations currently taking place and the expectation that e-payment usage will expand substantially over the next few years (Teoh, Chong, Lin & Chua, 2013). This article is organized as follows. First is an overview of the literature concerning the linkages between facilitating conditions, effort expectancy, performance expectancy, social influence, actual usage of e-payment, and continuance intention of e-payment.; next, the hypotheses to be tested are posited. Then, the research method is outlined, following which is a discussion of the analysis and results. Finally, a discussion of the study's findings concludes the study.

## **2. Literature Review**

### *2.1. Theoretical Background*

The UTAUT was drawn upon to examine and explain e-payment use among Generation Z members in Malaysia. This model proposes that four constructs impact behavioral intention and actual use of technology. These are 1) effort expectancy (similar to complexity and perceived ease of use), 2) facilitating conditions (similar to perceived behavioral control), 3) performance expectancy (perceived usefulness and relative advantage), and 4) social influence (similar to the subjective norm) (de Sena Abrahão, Moriguchi & Andrade, 2016; Foster, Saputra & Grabowska, 2020; Thakur & Srivastava, 2014).

In the UTAUT model, these four constructs affect the behavioral intention to use a technology, while behavioral intention and facilitating conditions evaluate the use of technology (Junadi, 2015). According to Maillet, Mathieu and Sicotte (2015), these frameworks concentrate on the expectations of users of the utility of a system for improving its effectiveness, the ease with which they can learn how to utilize a system, the role of significant individuals in the work environment in shaping the actions of end-users, and, finally, the steps taken to promote improvement. This current study adapted constructs and definitions from the UTAUT model to Generation Z technology acceptance and use. The section below deals with the hypothesis's formulation utilizing the UTAUT as a theoretical perspective to construct arguments and proposes several hypotheses to be examined empirically.

### *2.2. Performance Expectancy and Actual Usage of e-Payment*

Performance expectancy of use is a feature of a person's general view of how convenient a new technology is going to be (Acheampong, Zhiwen, Antwi, Otoo, Mensah & Sarpong, 2017; Al-Qeisi, Dennis, Alamanos & Jayawardhena, 2014; Humbani & Wiese, 2019; Keong, Ramayah, Kurnia & Chiun, 2012). Performance expectancy reflects the perceived utility

related to using an e-payment (Zhou, 2011). According to Zhou (2014), performance expectations reflect the value extracted from the usage of mobile payments. In particular, it applies to the assumption that utilizing an e-payment will be effortless (Chang, Hung, Cheng & Wu, 2015; Phan, Tran, Hoang & Dang, 2020; Riskinanto, Kelana & Hilmawan, 2017; Tella & Olasina, 2014). Performance expectancy and confirmations from previous use have a huge effect on users' happiness when implementing and using a product (Susanto, Chang & Ha, 2016). Once individuals have built confidence in online payments, they are less concerned about payment risk and confusion. Junadi (2015) and Zhou (2014) provided empirical evidence that performance expectancy significantly impacts the actual e-payment usage.

Previous studies also support the conclusion that once users believe that the degree of program effectiveness is sufficiently high, they are more trusting and able to adopt a system (Kaium, Bao, Alam & Hoque, 2020). Consequently, the belief of a user that employing e-payment would help to make improvements in the performance of payment tasks affects the behavioral purpose of implementing an e-payment (Goyal, Maity, Thakur & Srivastava, 2013; Oliveira, Thomas, Baptista & Campos, 2016). Qasim and Abu-Shanab (2016) argued that performance expectancy was a significant predictor of e-payment adoption. Recently, Isaac, Abdullah, Aldholay and Ameen (2019) demonstrated the positive effect of performance expectancy on actual Internet usage among employees in Yemen. Theoretically, several different studies have supported the impactful role of performance expectancy on usage behavior directly toward using e-payments (Chopdar, & Sivakumar, 2019; Marinković, Đorđević & Kalinić, 2020a; Mensah, Chuanyong & Zeng, 2020). Users might continue to use an e-payment service if they find it useful, even if they were disappointed with their previous usage (Khayer & Bao, 2019; Tella & Olasina, 2014). Hence, the following hypothesis is posited:

**H<sub>1</sub>.** *Performance expectancy positively influences the actual usage of e-payment.*

### 2.3. Effort Expectancy and Actual Usage of e-Payment

In the setting of the current study, effort expectancy represents the challenges in utilizing an e-payment system (Zhou, 2011). Effort expectancy is the ease of use related to the technical features of a system. Potential users would be more willing to adopt and implement a system that is easy to use with simply understood technical features (Chong, Chan & Ooi, 2012; Keong, Ramayah, Kurnia & Chiun, 2012; Lin & Nguyen, 2011; Phan, Tran, Hoang & Dang, 2020). Additionally, systems with lower effort expectancy have user-friendly interfaces, relevant content and graphical templates, useful functionalities, consistent instructions, and easily understood error messages (Lin & Nguyen, 2011). These features mean that once a person understands that few resources are required to understand a new mobile device, he or she will interpret the device as valuable, leading to its continued use (Humbani & Wiese, 2019).

Past studies have evidenced that effort expectancy had a significant impact on the actual e-payment usage (Goyal, Maity, Thakur & Srivastava, 2013; Maillet, Mathieu & Sicotte, 2015; Riskinanto, Kelana & Hilmawan, 2017). Qasim and Abu-Shanab (2016) indicated that effort expectancy typically tends to be of more considerable significance in early adoption, and a well-disseminated and approved technical infrastructure boosts efficiency and work results (Acheampong, Zhiwen, Antwi, Otoo, Mensah & Sarpong, 2017). Furthermore, Isaac, Abdullah, Aldholay and Ameen (2019) suggested that effort expectancy positively impacted the actual usage of the Internet. This relationship means that the more users believe that an e-payment device would be easy to use, the more they would continue to use that device in the future. Hence, the following hypothesis is posited:

**H<sub>2</sub>.** *Effort expectancy positively influences the actual usage of e-payment.*

### 2.4. Social Influence and Actual Usage of e-Payment

Social influence is used about the impressions that an individual perceives from significant other people about an action, which impacts whether he or she will engage in an action (Kijisanayotin, Pannarunothai & Speedie, 2009). The degree to which a person perceives that significant others think he or she should employ a technology is a social impact (Kaium, Bao, Alam & Hoque, 2020). Social influence is firmly rooted in technology adoption models and, more generally, in user behavior models (Koenig-Lewis, Marquet, Palmer & Zhao, 2015). In a study among university students, Chaouali, Yahia and Souiden (2016) discovered that a person who feels that significant people (e.g., family and friends) consent to his or her usage of new products, goods, or services may be more willing to accept and support such products and services. Thus, as Phan, Tran, Hoang and Dang (2020) have highlighted, most agree that social influence is a significant factor.

Indeed, social impact has had a strong influence on intention, indicating that peer perception serves a critical function in adopting mobile wallet services (Koenig-Lewis, Marquet, Palmer & Zhao, 2015). For example, Isaac, Abdullah, Aldholay and Ameen (2019) showed that social influence has a positive relationship with actual Internet usage. Past studies have also confirmed that social influence significantly influences actual e-payment usage (Junadi, 2015; Keong, Ramayah, Kurnia & Chiun, 2012). The findings highlighted the level of initiative and social impact as key predictors and listed time and technological assistance as major obstacles to adopting and using technology (de Sena Abrahão, Moriguchi & Andrade, 2016). Built a review of the extant literature, the following hypothesis is posited:

**H3.** *Social influence positively influences the actual usage of e-payment.*

### 2.5. *Facilitating Conditions and Actual Usage of e-Payment*

According to Mun, Jackson, Park and Probst (2006), facilitating conditions refer to the perception of internal and external limits on behavioral efficiency. Additionally, a facilitating condition is characterized as the degree to which an individual assumes that an organizational and technological framework exists to facilitate the usage of a system (Escobar-Rodríguez & Carvajal-Trujillo, 2014; Keong, Ramayah, Kurnia & Chiun, 2012; Kijisanayotin, Pannarunothai & Speedie, 2009). Zhou (2011) highlighted that a facilitating condition ensures people have the requisite tools and skills to access the mobile Internet. The prerequisite for users to approve either the use or trial of any good, product, or service is that a new product is practical and easy to use for those who expect to use the good, product, or service (Thakur & Srivastava, 2014). In their review of past studies, Alalwan, Dwivedi and Rana (2017) found that users would also be more likely to use e-payment because they have a certain amount of service and ability and view an e-payment as consistent with a specific technology that they currently utilize. Teo, Tan, Ooi, Hew and Yew (2015) elaborated that facilitating conditions characterized users with the ability to customize and run cell phones to access the wireless Internet. When users do not possess these tools and information, they will not want to use an e-payment device (Zhou, 2011).

Additionally, UTAUT suggested a strong influence of perceived facilitating conditions to accept any new technology (Thakur & Srivastava, 2014). If more facilitating conditions exist that encourage the usage of technologies, then individuals will be more willing to embrace the technologies (Im, Hong & Kang, 2011; Oliveiraa, Fariaa, Thomas & Popovica, 2014). Users may not want to use mobile technology unless they have the knowledge, resources, and skills required to do so (Kaium, Bao, Alam & Hoque, 2020). Furthermore, Oh and Yoon (2014) demonstrated that facilitating conditions are the variables that are theorized as having a direct effect on system use. Keong, Ramayah, Kurnia and Chiun (2012) suggested the effect of promoting requirements on the usage of the e-payment by end-users can be further decomposed into considerations that have the same goal of tapping the connection between an individual's working style and the usage of a system in an organization. Thus, the following hypothesis is posited:

**H4.** *Facilitating conditions positively influence the actual usage of e-payment.*

### 2.6. *Actual Usage and Continuance Intention of e-Payment*

Actual usage relates to the amount of time that a user spends with a technology (Tella & Olasina, 2014). Huang (2020) elaborated that individuals must use an information system to determine whether their continuing intentions to use an information system are high or low. In a study among Internet users in China, Gao, Waechter and Bai (2015) discovered that when users encounter an ideal experience, they can feel great pleasure and hope to have the experience again. Therefore they will continue to use it (Humbani & Wiese, 2019). Looking not only at the implementation of these programs but also at their continuance is necessary (Tan & Chen, 2008). Accordingly, the desire to participate and continue using e-payment characterizes e-payment continuity (Tella & Olasina, 2014). Extensive research has utilized the UTAUT model to a variety of digital innovations like e-payments (Junadi, 2015; Riskinanto, Kelana, & Hilmawan, 2017), mobile Internet (Chopdar & Sivakumar, 2019; Marinković, Đorđević & Kalinić, 2020b; Mensah, Chuanyong & Zeng, 2020; Odoom & Kosiba, 2020) and online banking (Al-Qeisi, Dennis, Alamanos & Jayawardhena, 2014; Chaouali, Yahia & Souiden, 2016).

Additionally, Susanto, Chang and Ha (2016) highlighted that if a good or service has been purchased, then a person's preferences will decide his or her level of fulfilment and potential desire to repurchase. A software is context-aware as it uses information to provide a user with appropriate knowledge or resources, and relevance depends on the role of the user (Cao & Niu, 2019). Hence, UTAUT might be more valuable for examining the actual information systems continued usage behavior instead of examining the continued intention of using an information system when the information system is organizationally mandated.

Along the same lines, Korzaan and Morris (2009) indicated that continuance intention taps into people's behavioral inclination or willingness to continue spending capital, energy, and time. In addition, the continuance usage intention of IT users has suggested that users gain anticipated benefits across the implementation, which has a positive impact on user and performance expectancy (Kaium, Bao, Alam & Hoque, 2020; Muangmee, Kot, Meekaewkunchorn, Kassakorn & Khalid, 2021). Most research has evaluated the behavioral intention to use a system before a system is implemented, using this variable as a surrogate for actual use (Ginanjar, Hurriyati, Adiwibowo, Gaffar & Saputra, 2019; Maillet, Mathieu & Sicotte, 2015). The underlying theory of current information system research on the use of technologies is that the sustenance engine is the continuous usage of an information system device or service (Osah & Kyobe, 2017). Using an information system affects user continuance intentions (Ofori, Boateng, Okoe & Gvozdanovic, 2017). If an operating system exists and promotes the usage of e-payments, then there would be an improvement in the actual usage to a continuance to accept e-payments (Oliveira, Thomas, Baptista & Campos, 2017; Tella & Olasina, 2014). Consequently, the following hypothesis is posited:

**H5.** *Actual usage positively influences the continuance intention of e-payment.*

## 2.7. Research Framework

Fig. 1 shows the theoretical framework for this study.

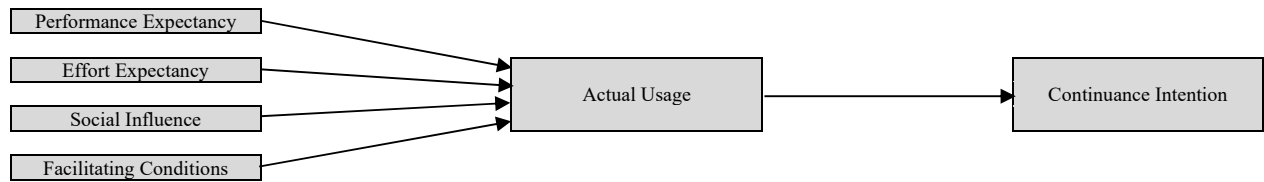


Fig. 1. Research Framework

## 3. Materials and Methods

### 3.1. Sample and Procedure

This study examined the association among effort expectancy, facilitating conditions, performance expectancy, social influence, actual use of e-payment, and continuance intention of e-payment through a correlational research design. A survey instrument was developed with measurement scales to test the research model. An online survey was distributed through social media platforms in Malaysia in April 2020, using snowball sampling. The participating respondents were requested to complete a survey to measure their electronic e-payment usage. A total of 667 completed questionnaires were gathered that were usable for further analysis.

### 3.2. Questionnaire Items

An online survey comprising 27 questions, which had two parts, was utilized for the empirical collection of data. The first part comprised eight close-ended questions to determine demographic variables using a nominal scale (types of e-payment, gender, age, race, e-payment systems usage frequency, e-payment system experience, educational level, and marital status). The second part contained the UTAUT model items. Use behavior was measured by using a four-item scale that adapted from Gupta and Arora (2019). Performance expectancy (four items), effort expectancy (four items), social influence (three items) and facilitating conditions (four items), continuance intention to use e-payment (three items) were adapted from Venkatesh, Thong and Xu (2012). The survey questionnaire was rated on a 6-point Likert-type scale in which values ranged from 1 = strongly disagree to 6 = strongly agree.

## 4. Results

### 4.1. Demographics

Of the 667 respondents, 74.2% were female, and 25.8% were male. Most respondents (32.4%) were born in 1999, followed by 31.0% in 1998, 16.6% in 16.6%, 14.7% in 2000, 2.8% in 1996, 1.9% in 1995, and only 0.4% in 2001. Moreover, the respondents were predominantly Malay (88.6%), followed by Chinese (3.7%), Indian (3.7%), and others such as Bumiputera Sabah and Sarawak (4.0%). Concerning marital status, 99.1% of the respondents were single, and 0.9% were married.

### 4.2. Measurement Model

Structural Equation Modelling (SEM) analysis with AMOS 26 was utilized to estimate the model in two stages (Anderson & Gerbing, 1988): the measurement and structural models for measurement quality and model fit. For measurement quality, the study followed the recommendations of Hu and Bentler (1999) and Hair, Babin and Krey (2017) by examining construct reliability, convergent validity, and discriminant validity. For a good model fit, the Chi-square normalized by degrees of freedom ( $\chi^2/df$ ) should not be more than 3, the goodness of fit index (GFI) should be more than 0.9, the adjusted goodness of fit index (AGFI) should be more than 0.8, the non-normed fit index (NNFI) should be more than 0.9, the comparative fit index (CFI) should be more than 0.9, and the root mean squared error (RMSEA) should be less than 0.08. In the CFA analysis the p-value was significant,  $\chi^2/df$  was 2.982 ( $\chi^2 = 518.919$ ,  $df = 174$ ), GFI = 0.930, AGFI = 0.908, CFI = 0.968, TLI = 0.961 and RMSEA = 0.055 suggesting adequate model fit.

Next, measurement quality was judged by examining the average variance extracted (AVE), composite reliability (CR), and loadings. Good measurement quality is exhibited when loadings  $\geq 0.7$ , AVE  $\geq 0.5$  and CR  $\geq 0.7$  (Ramayah, Cheah, Chuah, Ting & Memon, 2018). As shown in Table 1, all loadings were more than 0.7 (except one item = FC4), AVE was more than 0.5, and CR was more than 0.7. Therefore, the convergent validity and the reliability of the measurement items were acceptable.

**Table 1**  
The result of construct validity and reliability

Construct(s)	Item(s)	Loadings	CR	AVE
Performance Expectancy	PE1	0.846	0.883	0.655
	PE2	0.793		
	PE3	0.882		
	PE4	0.706		
Effort Expectancy	EF1	0.860	0.919	0.74
	EF2	0.870		
	EF3	0.879		
	EF4	0.832		
Social Influence	SI1	0.847	0.907	0.765
	SI2	0.880		
	SI3	0.896		
Facilitating Condition	FC1	0.830	0.876	0.641
	FC2	0.873		
	FC3	0.827		
	FC4	0.654		
Usage Behavior	UB2	0.825	0.824	0.613
	UB3	0.656		
	UB4	0.853		
Continue Usage	CI1	0.831	0.893	0.737
	CI2	0.884		
	CI3	0.859		

Note: Item UB1 was deleted due to low loadings.

Many researchers have used Fornell and Larcker, (1981) method for assessing discriminant validity, but Kline (Henseler, Ringle & Sarstedt, 2015) recently suggested that this method was not very good at measuring misspecified models. As such, they recommended the Heterotrait-Monotrait (HTMT) ratio of the correlations approach for assessing discriminant validity. The suggestions were to use an HTMT<sub>0.85</sub> or HTMT<sub>0.90</sub> threshold for assessing discriminant validity. If the calculated ratios were lower than 0.85 (stricter) or 0.90 (lenient), then the measures are discriminant. If not, they are not discriminated against.

**Table 2**  
The result of discriminant validity using Heterotrait-Monotrait (HTMT) ratio

No	Construct(s)	1	2	3	4	5	6
1	Performance Expectancy						
2	Effort Expectancy	0.831					
3	Social Influence	0.636	0.557				
4	Facilitating Conditions	0.794	0.850	0.659			
5	Usage Behavior	0.577	0.548	0.521	0.594		
6	Continue Usage	0.644	0.592	0.520	0.639	0.864	

Table 2 displays the result of discriminant validity using the Heterotrait-Monotrait (HTMT) ratio. The result indicated that all the ratios were lower than 0.90; thus, the measures used in this study are discriminant.

#### 4.3. Structural Model

Mardia's coefficient for multivariate kurtosis was 307.99 ( $p < 0.01$ ), and Kline (2012) said that values above 20 indicated that the data are not multivariate normal. Thus, a Bollen Stine bootstrapping with 5,000 resamples was run to produce the standard errors for hypothesis testing. First, the model fit was assessed. The  $\chi^2/df$  was 2.980 ( $\chi^2 = 517.697$ ,  $df = 178$ ), GFI = 0.931, AGFI = 0.911, CFI = 0.969, TLI = 0.963 and RMSEA = 0.054 suggesting adequate model fit. The  $R^2$  for Usage Behavior was 0.444, and for Continuance Intention, the  $R^2$  was 0.767. The four predictors explained 44.4% of the variance in Usage behavior, with Performance Expectancy ( $\beta = 0.273$ ,  $p < 0.01$ ), Social Influence ( $\beta = 0.183$ ,  $p < 0.01$ ) and Facilitating Conditions ( $\beta = 0.290$ ,  $p < 0.01$ ) were positively related to Usage behavior while Effort Expectancy ( $\beta = 0.039$ ,  $p > 0.05$ ) was insignificant (see Table 3). This supports H1, H3 and H4 while H2 was not supported. Usage behavior ( $\beta = 0.751$ ,  $p < 0.01$ ) was positively related to Continuance Intention explaining 76.7% of its variation.

**Table 3**  
The result of hypothesis testing

Hypothesis	Path	Unstd. Beta	Std. Beta	Std. Error	t-values	p-values
H1	PE → UB	0.273	0.257	0.082	3.338	$p < 0.001$
H2	EE → UB	0.039	0.038	0.092	0.423	$p < 0.672$
H3	SI → UB	0.183	0.191	0.048	3.788	$p < 0.001$
H4	FC → UB	0.290	0.265	0.090	3.211	$p < 0.001$
H5	UB → CI	0.751	0.876	0.037	20.176	$p < 0.001$

Note: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Usage Behavior (UB), Continue Usage Intention (CI)

## 5. Discussion

This section concentrates on the study's primary findings, discussing the research objectives, the implications of the results, the limitations of the research, and directions for future research. This paper offered a framework for evaluating the factors influencing the use of e-payment among Generation Z users in Malaysia. This study investigated the relationship of the UTAUT model on actual e-payment usage. The findings confirm the effectiveness of performance expectancy on actual usage of e-payment. This result is consistent with extant research findings (e.g., Chang, Hung, Cheng & Wu, 2015; Khayer & Bao, 2019; Riskinanto, Kelana & Hilmawan, 2017; Tella & Olasina, 2014; Zhou, 2014). Zhou (2014) indicated that when users evaluate their continued use of mobile payments, they are interested in gaining a positive benefit and in having an engaging experience. Phan, Tran, Hoang and Dang (2020) further contended that the degree of value that e-payments offer to the success of payment activities significantly affects e-payment adoption. The impact of performance expectancy also aligns with the findings of previous research (Goyal, Maity, Thakur & Srivastava, 2013; Junadi, 2015; Kaium, Bao, Alam & Hoque, 2020; Susanto, Chang & Ha, 2016). Viewed through the lens of the UTAUT model, the results also support the importance of the perspective of users that their efficiency and transactions can be enhanced through e-payments (Isaac, Abdullah, Aldholay & Ameen, 2019; Oliveira, Thomas, Baptista & Campos, 2017; Qasim & Abu-Shanab, 2016). Social influence had a significant impact on actual e-payment usage. This finding aligns with de Sena Abrahão, Moriguchi and Andrade (2016); Isaac, Abdullah, Aldholay and Ameen (2019); Junadi (2015); Keong, Ramayah, Kurnia and Chiun (2012), which has identified the effect of effort expectancy on actual usage. For instance, Phan, Tran, Hoang and Dang (2020) found a positive impact of social influence on e-payment usage. In their study, they measured social influence among citizens in Hanoi City of Vietnam. Additionally, Nguyen and Huynh (2018) suggested adding social influence to study e-payment usage. This result also aligns with Chaouali, Yahia and Souiden (2016), who argued that social associations were related to specific behavior. Furthermore, the results showed that the influence of facilitation conditions was positively associated with the actual e-payment usage. Such a finding aligns with much previous research (e.g., Alalwan, Dwivedi & Rana, 2017; Im, Hong & Kang, 2011; Kaium, Bao, Alam & Hoque, 2020; Keong, Ramayah, Kurnia & Chiun, 2012; Oliveiraa, Fariaa, Thomas & Popovica, 2014; Teo, Tan, Ooi, Hew & Yew, 2015; Zhou, 2011). Oh and Yoon (2014) found that the users tend to use the Internet when they feel the resources are available for their use. Therefore, barriers to use like slow access level, unavailability, or service disruption due to the unreliable system would reduce the user's perception of service value. Mobile service providers, therefore, must facilitate conditions to support users (Thakur & Srivastava, 2014). This study found that the influence of effort expectancy was insignificant, which seems to indicate that when competing with other variables, effort expectancy has lost its significance. This is different from the findings of some studies (Goyal, Maity, Thakur & Srivastava, 2013; Isaac, Abdullah, Aldholay & Ameen, 2019; Maillet, Mathieu & Sicotte, 2015; Riskinanto, Kelana & Hilmawan, 2017). Among the possible reasons for this difference are that Riskinanto, Kelana and Hilmawan (2017) and Goyal, Maity, Thakur and Srivastava (2013) used perceived ease of use as a construct. Additionally, Maillet, Mathieu and Sicotte (2015) suggested that a mediating variable could impact the relationship.

## 6. Conclusion

In conclusion, this study has identified the facilitating conditions, performance expectancy, and social influence that impacted the actual usage of e-payment. Surprisingly, effort expectancy was not significantly related to the actual usage of e-payment. The study's findings have several implications for managers and point the way towards future research. No prior empirical study has investigated the role of the Unified Theory of Acceptance and Use of Technology model on e-payment usage among Generation Z in Malaysia to the best of the authors' knowledge. These results provide valuable contributions that can help decision-makers formulate or adjust their strategies associated with e-payment usage.

### 6.1. Theoretical Implications

This research offers contributions to both practitioners and researchers. The study explored the association between the UTAUT model, actual usage of e-payments and the continuance intention of e-payment. This study demonstrated the validity and applicability of the UTAUT model in the context of an e-payment device in a developing and emerging economy like Malaysia. According to the best knowledge, this was the first study conducted among Generation Z in Malaysia to measure the use of e-payments through the UTAUT model. The study further contributes to the knowledge base on e-payments by examining the role of performance expectancy, along with other drivers in the model. A thought-provoking finding contrary to previous results was that effort expectancy had no significant influence on the actual e-payment usage. Perhaps this was related to the fact that members of Generation Z have been immersed in technology and its applications all their lives.

### 6.2. Practical Implications

This research offers several practical contributions to the understanding of e-payment users. E-payment systems can collect pertinent information about users and their environments. Using this information, e-payment service providers could provide more personalized services to users at the most appropriate place and time. Thus, e-payment could be utilized at anytime from anywhere. These will surely help to retain existing e-payment users among Generation Z and expand its usage.

### 6.3. Limitation and Future Research Directions

Although this study was a productive examination of the adoption and continuance usage intention of e-payment, several limitations exist. First, this empirical study used a cross-sectional survey method to study members of Generation Z who

participated in the study. It would be interesting to focus on longitudinal data to ascertain causal relationships among and between independent and dependent variables or to use multiple cases further to investigate the role of the UTAUT model and e-payment usage. Second, a new study using the proposed framework could consider other variables and add them to the framework. For example, future studies could use other variables such as demographic as a moderator variable for e-payment usage (Nguyen & Huynh, 2018; Oh & Yoon, 2014). Third, this research was conducted in a single country, suggesting that replication in a cross-national setting would be useful. Future research projects could study users who use e-payments across different geographical contexts and conduct cross-country and cross-cultural comparisons. Finally, the context of the study was a limitation. The survey instrument was limited to one user setting at one point in time and was limited in terms of broader generalizations. Further research representing different age groups with a more balanced composition is necessary.

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