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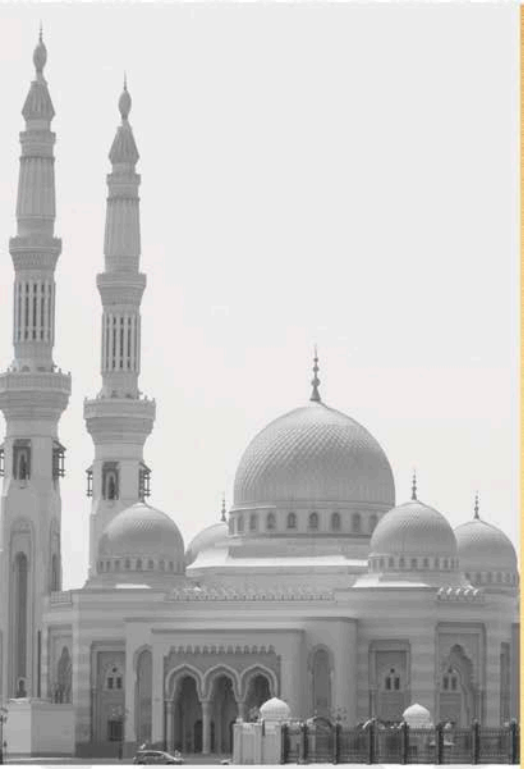

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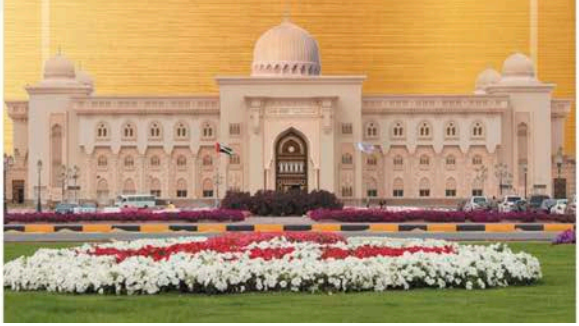

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المتنبئون بسلوك الدفع بالمحفظة الإلكترونية لجيل الألفية في مرحلة ما بعد كوفيد-19 في ماليزيا

PREDICTORS OF MILLENNIALS' E-WALLET PAYMENT BEHAVIOUR IN POST-COVID-19 IN MALAYSIA[1]

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الملخص

كشفت هذه الدراسة عن عوامل مساهمة يمكن أن تحدد سلوك دفع المحفظة الإلكترونية لجيل الألفية في مرض ما بعد فيروس كورونا 2019 (كوفيد-19) في ماليزيا. في هذه الدراسة، تم الاتصال بـ 256 مستجيبا من جيل الألفية من لابوان وكوتا كيناباالو، ماليزيا باستخدام استبيان عبر الإنترنت عبر نماذج جوجل لجمع البيانات بشكل فعال. استخدمت هذه الدراسة نموذج 'الموقف والتأثير الاجتماعي والكفاءة الذاتية' كنظرية أساسية لشرح سلوك الدفع عبر المحفظة الإلكترونية لجيل الألفية في مرحلة ما بعد كوفيد-19. وكشفت النتائج أن الموقف والتأثير الاجتماعي والكفاءة الذاتية كانت مؤشرات مهمة لسلوك المحفظة الإلكترونية. إلى جانب ذلك، كان الموقف أيضا بمثابة متغير وسيط مهم. يجب النظر في النتائج التي تم الحصول عليها بحذر. يتم الاعتراف بعاملين مقيدين على الأقل من حيث المواقع الجغرافية المحدودة وكذلك المتغيرات المحصورة المستخدمة لشرح السلوك. إلى جانب هذه القيود، قد تدرس الأبحاث المستقبلية نظريات أخرى لمقارنة النتائج لتحسين المساهمات في دفع المحفظة الإلكترونية في ماليزيا. ستكون النتائج التي تم الحصول عليها وثيقة الصلة بتطوير سياسة المحفظة الإلكترونية في مرحلة ما بعد كوفيد-19 وإرشادات جديدة لتعزيز التبني لأغراض الدفع في ماليزيا. تقدم هذه الدراسة منظورا جديدا للتأثيرات المحتملة لسلوك المحفظة الإلكترونية لجيل الألفية في مرحلة ما بعد كوفيد-19 في ماليزيا باستخدام نموذج بورصة عمان.

Abstract

This study uncovered contributing factors that could determine millennials' e-wallet payment behaviour in post-coronavirus disease 2019 (COVID-19) in Malaysia. In this study, 256 millennial respondents from Labuan and Kota Kinabalu, Malaysia were approached using an online questionnaire via Google Forms for effective data collection. This study used the 'attitude, social influence and self-efficacy' (ASE) model as a baseline theory to explain millennials' e-wallet payment behaviour in post-Covid-19. The results revealed that attitude, social influence and self-efficacy were significant predictors of e-wallet behaviour. Besides, attitude also served as a significant mediating variable. The results obtained should be considered with caution. At least two limiting factors are acknowledged in terms of the limited geographical locations as well as confined variables used to explain the behaviour. Besides these constraints, future research might examine other theories to contrast the findings for improved contributions in e-wallet payment in Malaysia. The results obtained would be very pertinent for the development of an e-wallet policy in post-Covid-19 and new guidelines to boost adoption for payment purposes in Malaysia. This study presents a new perspective on the potential impacts of millennials' e-wallet behaviour in post-COVID-19 in Malaysia using the ASE model.

الكلمات الدالة: جيل الألفية، المحفظة الإلكترونية، الإطار، السلوك، كوفيد-19، ماليزيا.

Keywords: Millennials, E-wallet, Framework, Behaviour, Covid-19, Malaysia.

1.0 Introduction

The COVID-19 pandemic spread throughout the globe and ultimately brought about unprecedented changes across all aspects of our lives, including how we buy and pay for services and products. In the past

few years, the popularity of electronic wallets or e-wallets also known as digital payment applications (apps), has already expanded in Malaysia, but this tendency alone has increased in the post-Covid-19 period. Millennials, who have become accustomed to technology and are digital natives, occupy the frontline of such a shift in payment behaviour (Aji and Adawiyah, 2022). E-wallets or digital payment apps are however one form of payment system that has grown in popularity in the past few years (Bommer et al., 2022).

E-wallets are a quick and safe way for users to purchase products and services that do not require credit cards or cash. Such a payment option has transformed the way one makes purchases, from grocery shopping to travel-related payments. Moreover, e-wallets have become increasingly common in countries where banking systems are quite developed or there are large numbers of unbanked people (Aji and Adawiyah, 2022).

E-wallets render a secure and simple method for storing, sending, and receiving money, without having to maintain a bank account. It has facilitated access to financial services and provided countless individuals with access to resources and opportunities that individuals would have been unable to obtain otherwise. E-wallets also have become more prevalent in advanced countries, with key players such as PayPal, Apple Pay, and Google Pay taking over the market (Bommer et al., 2022). These businesses have been successful in terms of offering the security and ease of e-wallets by offering customers a simple and quick method of carrying out digital payments that do not require credit cards or cash (Aji and Adawiyah, 2022; Lim, 2022).

It is, therefore, pertinent to take a glance over e-wallet payment usage that is widely known and whether e-wallets will affect the future of payments (Loh et al., 2021). The rise of digital technology has enabled people to have access to fast and reliable internet connections, making it easier to use e-wallets or digital payment apps that in turn changed the landscape of payment behaviour that has rapidly evolved in the digital age as new digital methods of payment emerge (Esawe, 2022). Likewise, as people have become more conscious of minimising physical contact and have been encouraged to use contactless payment methods, the COVID-19 pandemic has played a significant role in the surge of e-wallet usage. Moreover, the use of e-

wallets has increased dramatically, due to advances in technology, as well as initiatives by the government of Malaysia aimed at boosting the digital economy (Bank Negara Malaysia, 2017). On that note, as e-wallet application expands, it is also anticipated to see more innovation and advancements in this area, with the potential to transform the way individual conduct transactions around the world (Loh et al., 2021).

Based on numerous digital payment app users during Covid-19 Malaysia has witnessed an increase in digital payment use, as previously indicated (Shaikh et al., 2020). There are nonetheless obstacles to overcome, the economic benefits of using an e-wallet are vast, and their contribution to influencing the future of payments cannot be overstated. There has been limited research on the factors that influence the usage behaviour of e-wallets or digital payment apps among millennials in East Malaysia, as best known to the authors' knowledge. Furthermore, the current study will incorporate the variables of self-efficacy along with attitude and social influence within the framework of the 'attitude, social influence and self-efficacy' (ASE) model.

Additionally, in an attempt to address a gap in the literature, the aforesaid variables will be explored in pursuit of factors including mediating variables, that are accountable for e-wallet usage in Malaysia. As a result, this study will address the gap by utilising ASE as a base model to assess millennials' usage of e-wallets or digital payment app services. As a result, the research study will be useful to local digital payment gateways, policymakers and digital payment industry practitioners and or operators. Besides, this would broaden the spectrum of vital determinants that might have been relevant to the millennials' usage of e-wallet apps. In the current work, authors examine the post-Covid-19 changes in Malaysian millennials' e-wallet payment behaviour, analyse the determinants that are related to e-wallet usage behaviour as the role it could play as well as the potential implications for the Malaysians' online payment gateways system.

This paper is organized into six sections. Following the introduction in this first section, the second section comprises the literature review that provides syntheses to past studies related to this study. The third section details the methodology, consisting of

respondents, questionnaire items and data analysis. The fourth section presents the results of this study, followed by a fifth section regarding research implications. The sixth section presents the conclusion.

2.0 Literature Review

This study aims to explain millennials' e-wallet payment behaviour, which differs from previous studies that focused on behavioural intention rather than actual activity (Aji et al., 2020; Revathy and Balaji, 2020). Malaysia is considered in this study for at least two key reasons. First, the Malaysian e-wallet environment is diversified, allowing for a thorough examination of various business models, features, and strategies adopted by service providers. Among the service providers are Boost, GrabPay, and MAE. Second, via different initiatives and programmes such as the ePenjana project, the Malaysian government has aggressively encouraged the development and usage of e-wallets.

Certain studies are relevant in the contemporary setting, but they differ in terms of topics, theories, and empirical findings based on distinct trends, difficulties, or even possibilities that have evolved as a result of the epidemic. For instance, Ariffin et al. (2022) employed the technology acceptance model (TAM) and theory of planned behaviour (TPB) and examined consumers' intention to use e-wallet services in Malaysia. They found that perceived behavioural control affects intention whilst attitude and subjective norm influence the formation of user satisfaction. In another context, Aji et al. (2020) examined the use of e-wallets during the COVID-19 outbreak and found that perceived risk and perceived usefulness are essential for the development of the use. Like Ariffin et al. (2022) and Aji et al. (2020), a study by Revathy and Balaji (2020) also examined e-wallets amid of COVID-19 lockdown period. They found that perceived security, social influence, and performance expectancy are the positive and significant predictors of e-wallet usage whereas, effort expectancy does not have a significant influence on e-wallet usage. In Sri Lanka, however, Jesuthasan and Umakanth (2021) found that attitude, perceived usefulness, perceived ease of use, perceived cost, perceived Risk, and COVID–19 are the positive and significant predictors of e-wallet usage. The final lessons from these studies – first, e-wallet has

been an important payment system during the pandemic, second, e-wallet acceptance is influenced by different factors according to countries and theories used. Despite their importance, a study using the ASE model for understanding post-COVID-19 e-wallet use is falling short, which warrants the current study to be undertaken to close the gap.

2.1 Theoretical framework

This study employs the Attitude-Social Influence-Self Efficacy (ASE) model to examine e-wallet behaviours. The model was created in health education by de Vries et al. (1988). According to the paradigm, three elements determine behaviour: Attitude refers to an individual's favourable or negative assessment of the behaviour in an issue. Social influence refers to an individual's feeling of social pressure to engage or refrain from engaging in behaviour based on the expectations of others. Self-efficacy is connected to an individual's belief in their capacity to successfully do the behaviour. There are two reasons for our selection of the ASE:

- First, we selected the ASE for its ease of use and the growing empirical support it derives from its dynamic character. This explains why the ASE was chosen for its parsimony and predictive power, which make it simple to apply in a variety of contexts of research. As a consequence, the ASE is applicable in our contemporary situation; and
- Second, the current study examined customer behaviour. Since the ASE captures customer behaviours, it is excellent for evaluating and expanding our present study. The ASE variables, which state that attitude, subjective norm, and self-efficacy are crucial in determining behaviour, corroborate this. Various empirical studies have shown that different measures have different effects on behaviour.

2.2 Hypotheses development

- Attitude

Attitude is defined as an intrinsic belief which is related to the way of thinking or feeling about certain subjects or behaviours. In our case, however, it is a manner of individuals toward e-wallet payment in the

context of Malaysia. Numerous studies have documented the important role of attitude in performing behaviour or at least intention (Ramayah et al., 2009; Linden, 2011). Furthermore, Ramayah et al. (2009) discovered a significant relationship between attitude and Internet stock trading among Malaysian investors. The improved literacy about investing in the stock market has been a contributing factor to the formation of this relationship as well as the growing role of a passive income generation mindset among them. Similarly, this finding is somewhat in tandem with Linden (2011) who found a significant interaction between attitude and charitable intentions. Beliefs found in one's historical record of kindness can also be an important source for the behaviour to take place.

Though Ramayah et al. (2009) and Linden (2011) articulated that attitude is a sound predictor for behavioural intentions, however, work from Dulle and Minishi-Majanja (2011) discovered otherwise. Unlike Ramayah et al. (2009) and Linden (2011), using the binary logistic model, Dulle and Minishi-Majanja (2011) found that actual behaviour is not determined by attitude towards behaviour. The different conceptualisation for the items used and the context of research is the contributing factor to the discrepancy of the results obtained. Dulle and Minishi-Majanja's (2011) finding aligns with Venkatesh et al. (2003). Venkatesh et al. (2003) discovered that the attitude construct has no significant influence on behaviour intention. This is perhaps determined by the strong belief of individuals that the use of technology is shaped by individuals' techno-savvy and the environment in which they are living. However, other studies reveal that attitude can shape the formation and development of behaviour. Given this highlight, we aim to contribute to closing the gap by providing new empirical findings pertinent to the effect of attitude on e-wallet payment behaviour in Malaysia. Therefore, H_1 was hypothesized as:

H_1: Attitude has a significant effect on e-wallet payment behaviour.

- Social influence

According to de Vries et al. (1988), social influence is described as the anticipation of the opinions of other significant people, normative

ideas, and the degree to which an individual is likely to agree with these opinions or the reasons to comply. It has been discovered that social influence is a crucial determinant of behavioural intention. More specifically, the effect of this importance is stronger for smokers than non-smokers due to sociability, pleasant taste, and boredom relief. Brug *et al.* (1995), influenced by de Vries et al. (1988), discovered a substantial impact of social influence on the intention to consume salads but not boiling vegetables and fruit, in contrast to their findings on attitude and self-efficacy. The insignificance here may be due to individuals' surroundings, which may have a marginal impact on communal food consumption for fruit and vegetables, which are seen as personal and private rather than available for public exchange and debate.

When it comes to food intake, some people have strong opinions that are difficult to change. Similarly, Lechner and de Vries (1995), like de Vries *et al.* (1988), evaluated the ASE model but from the perspective of an employee fitness programme and discovered that social impact is important in shaping behavioural intention. This suggests that when responders are engaged in the fitness plan, the reported experience derived from social support becomes more prominent. Sandvik *et al.* (2007) describe the same result, inspired by de Vries *et al*. (1988) and Brug *et al*. (1995), where social impact is the predictor of fruit intake. One probable explanation for this outcome is the parents' culture of instilling the fruit-eating habit in their children. When the ASE is taken into account, the effect of social influence on acceptance in our current study is negligible. In response to this worry, the works of Saygili *et al*. (2022) and Amin (2022) are assessed for their usefulness in providing a baseline point for closing the gap. As a result, H_2 was proposed as follows:

H_2: Social influence has a significant effect on e-wallet payment behaviour.

- Self-efficacy

By definition, de Vries *et al*. (1988), self-efficacy is defined as a person's belief in his capacity to do a desired conduct. It does not represent a person's abilities, but rather one's perceptions of what one is capable of doing with whatever abilities one possesses. As a result,

self-efficacy refers to views about one's capacity to accomplish certain actions in given contexts. They observed a substantial link between subjective norm and intention, which makes a major unique addition to predicting behavioural intention. This result illustrates the significance of self-efficacy in encouraging zakat payment in the current study, with the belief that the greater the degree of self-efficacy, the greater the acceptance. This result is also consistent with Brug *et al*. (1995), who extended de Vries *et al*.'s (1988) study though they are different in terms of research design.

Moreover, Brug *et al*. (1995) identified a substantial link between self-efficacy and consumption. The link is positive, implying that the greater one's self-efficacy, the greater one's acceptance. Self-efficacy is defined in this study as respondents' capacity to consume acceptable portions of fruit and vegetables in a variety of circumstances. Similarly, Lechner and De Vries (1995) discovered that self-efficacy is the best predictor of the phases of behavioural change for an employee fitness programme due to potential obstacles to involvement, implying that participation is likely to increase when assistance is provided. Sandvik *et al*. (2007) discovered that the self-efficacy impact on fruit consumption is greater in Spain but not in Norway or Austria, owing to cultural obstacles and skills that contribute to the outcome. However, when the ASE is utilised in our present case, the influence of self-efficacy on acceptance is expected to be significant. These two works namely by Amin (2022) and Saygili *et al*. (2022) hypothesised self-efficacy is a significant contributing factor to the formation of behaviour and we expect the same outcome in our case. Thus, the following H_3 was proposed:

H_3: Self-efficacy has a significant effect on e-wallet payment behaviour.

- Attitude as mediator

Following Ro (2012), the mechanism of the association between the independent variable and the outcome variable is generally the focus of mediator research. Often, the researcher is more interested in the "how" and "why" than in the independent variable itself. As a result, when the association between the independent variable and the outcome variable is statistically significant, mediators are frequently

studied (Baron and Kenny, 1986). If the association is strong, the researcher may be interested in discovering a mediator that explains how or why the independent variable predicts the outcome (Bennett, 2000). In this study, we refer to at least four articles, which have examined attitude as a mediating variable in the relationships between independent variables and a dependent variable, producing mixed outcomes. The first article by Adiba (2019) examined consumer purchasing behaviour of *halal* cosmetics in Indonesia. Attitude is found to be an essential mediator in the relationships between *halal* knowledge, Islamic religiosity and consumer behaviour. This outcome is attributed to the strong belief among generations Y and X pertinent to the importance of choosing cosmetics from their context of *halalness* because of safety and assurance reasons.

In the same year, a study by Setiawati *et al.* (2019) comparable to Adiba (2019), used the same PLS programme and found attitude mediates the relationship between halal awareness and purchase intention, sourced from the significant effect of halal awareness on attitude. Unlike Adiba (2019), Setiawati *et al.* (2019) found no mediating role of attitude on the relationship between religiosity and purchase intention, perhaps one of the reasons is the use of different outcome variables, like one Adiba (2019) used behaviour whilst Setiawati *et al*. (2019) used behavioural intention, contributing to the different results. In a different context, Amin and Hamid (2018) found a significant mediating role of attitude on the relationships between *the maqasid* factor, product attractiveness and willingness. Unlike Adiba (2019) and Setiawati *et al.* (2019), Amin and Hamid (2018) focused on *tawarruq* home financing (tripartite agreement of home financing). *Maqasid* is an objective of Islamic law that contributed to that outcome due to its importance in improving *ummah* wellness and satisfaction in religion. Following Engku Ali (2010), the distinctiveness of the product becomes more appealing when the attributes bring a positive impact on the development of willingness to choose *tawarruq* home financing. Though these works, all combined, have examined attitude as a mediator and found some interesting findings, the application of the attitude as a mediator to e-wallet is falling short, and warrants extensions to include the current context. Beyond these works, we aim to examine the mediating role of attitude on the relationships

between social influence, self-efficacy and behaviour and therefore these hypotheses were postulated:

H_4: Attitude is expected to have a mediating effect on the relationship between social influence and behaviour.

H_5: Attitude is expected to have a mediating effect on the relationship between self-efficacy and behaviour.

3.0 Methodology

3.1 Research scope

Studies pertinent to e-wallets have been rotated in the context of behavioural intention or acceptance during the pandemic and the theories used could also vary from one to another. Ariffin *et al*. (2022) used the integration of the TAM and the TPB to predict the behavioural intentions of e-wallet services. Aji *et al.* (2020) employed a modified TAM to examine factors influencing e-wallet intention to use. Further, Revathy and Balaji (2020) employed the Unified Theory of Acceptance and Use of Technology (UTAUT) whilst Jesuthasan and Umakanth (2021) employed modified TAM. None of these studies examine e-wallet adoption using the ASE model and for that, the current study is undertaken to close the gap.

3.2 Respondents

This study adopted the survey as the main method for data collection. The unit of analysis of this study is millennials who performed e-wallet payments in his/her purchase. We used judgmental sampling to select respondents. Data were gathered using an online questionnaire developed using Google Forms and its link pasted on Facebook for effective data collection, and for that purpose, three criteria were established to promote and foster online participation by respondents targeted. The details are presented as follows:

- The respondents experienced more than one transaction for payment using their e-wallet through their mobile phones;
- They also experienced millennials aged from 25 to 42 years to show their serious participation in performing the e-wallet behaviour; and
- The targeted respondents were own e-wallet applications identified in the context of Malaysia.

These criteria ensured that the selected respondents provided robust and sincere feedback pertinent to their e-wallet payment behaviours. In terms of sample size, Comrey and Lee's (1992) recommendation was employed in which sample sizes of 50 are very poor, 100 are poor, 200 are fair, 300 are good, 500 are very good and 1000 are excellent. We targeted 200 respondents for actual data collection owing to time and financial constraints. An enumerator was appointed who manage the design and data collection for this study. The sample included professional and non-professional millennials from diverse employments and sectors.

The core survey was conducted online and ran for one month from December 1, 2022, until December 31, 2022. To attract millennials, at least 5 times attempts to be made in uploading the questionnaire link with a different caption attached to it for effective participation. Finally, 256 valid questionnaires have been collected without any exclusion. The sample size is 256. Table 1 displays the details of the respondents involved.

Table 1. Profile of respondents

Variable	Frequency	%
Gender		
Male	151	59.0
Female	105	41.0
Marital status		
Single	126	49.2
Married	130	50.8
Ethnic		
Malay	102	39.8
Kadazan-Dusun	48	18.8
Chinese	51	19.9
Bajau	40	15.6
Indian	4	1.6
Other ethnics	11	4.3

3.3 Questionnaire

A one-page questionnaire was developed for data collection. The questionnaire used a five-point Likert scale where a score of 1

represented 'strongly disagree' while a score of 5 represented 'strongly agree'. The questionnaire items for the constructs developed were adapted from previous investigations. Before the actual survey, a pilot survey at Universiti Malaysia Sabah was conducted involving 30 respondents through personal face-to-face interviews to pinpoint questions that would not be understandable by millennials. After all, the questionnaire items were found understandable, and no major issues were discovered associated with the obscurities of the message delivered.

3.4 Data analysis

SPSS version 21 was used for data analysis. Descriptive, regression and PROCESS were used for data analysis. Descriptive statistics were employed to describe the characteristics of the sample, as well as to determine the details of the millennials involved in this work. Regression was chosen for answering research questions for direct relationships. This kind of analysis is acknowledged to give more accurate predictions of probabilities when there are more than independent variables predicted to affect behavioural intention or actual behaviour, defined as a continuous dependent variable, hence the use of regression is valid. PROCESS is used to determine the mediating effects of attitude drawn from this study.

4.0 Results

4.1 Validity, reliability and multicollinearity

Three steps of analysis were undertaken before the regression model was conducted to meet the objective of this study. All battery items tested in this study were subject to the validity, reliability and multicollinearity evaluations to ensure the items developed were testified according to the research setting. When Table 2 is examined, all items representing attitude were loaded as what they were hypothesised and found valid to represent the construct. Other constructs' items were also found to be in tandem with the outcome generated from attitude. All items sourced from attitude, subjective norm and self-efficacy were greater than the recommended value of 0.6, supporting the discriminant validity in the battery items analysed. Besides these independent variables, the dependent variable which is e-wallet payment behaviour was also significant and valid, explaining

and denoting the items representing the e-wallet payment behaviour construct, which were acceptable for further data analysis.

Table 2. Validity and reliability

Construct	Loadings	Cronbach's α
Attitude towards behaviour (AT)		
AT1	.786	.889
AT2	.772	
AT3	.786	
AT4	.841	
AT5		
Subjective influence (SI)		
SI1	.769	.902
SI2	.745	
SI3	.755	
SI4	.764	
SI5	.775	
Self-efficacy (SE)		
SE1	.739	.892
SE2	.725	
SE3	.793	
SE4	.766	
SE5	.731	
E-Wallet Payment Behaviour (EPB)		
EPB1	.768	.881
EPB2	.739	
EPB3	.732	
EPB4	.767	
EPB5	.887	

Table 3. Multicollinearity test

Construct	AT	SI	SE	EPB
AT	1	.697**	.693**	.730**
SI	.697**	1	.513**	.689**
SE	.693**	.513**	1	.703**
EPB	.730**	.689**	.703**	1

**. Correlation is significant at the 0.01 level (2-tailed).

When Table 3 is examined, substantial intercorrelations between the independent variables were found that were below the 0.8 cutoffs. Due to the minimal likelihood of multicollinearity, all variables were kept in the multiple regression analysis. The impacts of attitude, social influence, and self-efficacy on e-wallet payment behaviour were examined using multiple regression, where

$Y = \alpha 0 + \delta AT + \varphi SI + \psi SE + \varepsilon$
Y: E-wallet payment behaviour
AT: Attitude
SI: Social influence
SE: Self-efficacy
ε: Error term

4.2 Regression model

Based on the findings in Table 4, it was determined that the three independent variables could account for 61.4 per cent of the variation in e-wallet payment behaviour. The R^2 obtained was found to be 0.614. Attitude and e-wallet payment behaviour were substantially related (t=4.161, $p < 0.000$), confirming H_1. A strong and upbeat mindset encourages millennials to overcome any obstacles they may encounter when making an e-wallet payment. This is sourced from the positive attitude towards e-wallet payment behaviour.

Social influence is also in tandem with attitude which was significantly related to e-wallet payment (t=6.425, $p < 0.000$), supporting H_2. The selected respondents were aware of the rising popularity of e-wallet payments among millennials, and this stable society contributes to creating an atmosphere that is conducive to efficiently promoting e-wallet payments, contributing to the outcome

obtained. Moreover, self-efficacy was significantly associated with e-wallet payment (t=7.067, $p < 0.000$), supporting H_3. This result was reached as a result of the increased capacity and collective resilience that allowed the respondents to make e-wallet payments, which are undoubtedly continuing in the short term but become a habit with time.

When Table 4 is examined, self-efficacy has the greatest effect on e-wallet payment behaviour, shown by the coefficient reported (β = 0.359), followed by social influence (β = 0.328) and the third-ranked variable is attitude (β = 0.253). These results indicate that abilities and knowledge play and serve important roles in performing the behaviour. Thus, the higher the extent of self-efficacy, the better e-wallet payment behaviour. Social influence is related to the environment and atmosphere in which people exchange information and ideas pertinent to behavioural use.

If the society is stable and well-versed in the employment of e-wallet payment behaviour, the better the social influence influences one to perform the behaviour in a collective people. Further, one's intrinsic value stemming from attitude can also help in shaping the development and formation of e-wallet payment behaviour in the current setting.

Table 4. Multiple regression analysis

Construct	Standardized β	t-value	p-value
Attitude	0.253	4.161**	0.000
Social influence	0.328	6.425**	0.000
Self-efficacy	0.359	7.067**	0.000
F-value		165.346** (.000)	
R^2		0.614	
Adjusted R^2		0.463	

Notes: * $p < 0.05$, ** $p < .01$, ns – not significant

4.3 Post hoc analysis

Following Preacher and Hayes' (2004) approach, this study assessed the mediating role of attitude on the relationship between subjective influence and behaviour. Adding to that, the mediating role of attitude

on the relationship between subjective influence and behaviour is also examined. The results revealed that there was a significant indirect effect of attitude on behaviour (b=0.3188, t = 5.87), supporting H_4. Furthermore, the direct effect of subjective influence on behaviour in the presence of the mediator was also found significant (β =0.3280, p < .001). Hence, attitude partially mediates the relationship between subjective influence and behaviour. In other words, it is also called complementary mediation in which a*b*c (0.7661*0.4161*0.3280 = +0.10456) are found positive in the outcome of the calculation. The sign of direct and indirect effects is the same. It was also reported a significant role of attitude as a mediator in the relationship between self-efficacy and behaviour (β =.2717, t = 6.47), supporting H_5. The direct effect of self-efficacy on behaviour in the presence of the mediator was also found (β =.3166, p <.001). Thus, attitude partially mediated the relationship between self-efficacy and behaviour. In other words, it is also called complementary mediation in which all coefficients carried positive values, computed as 0.6792*0.3999*0.3166 = 0.086. The mediation analysis summary is presented in Table 5.

Table 5. Mediation analysis

Pathway	Total Effect	Direct Effect	Indirect Effect	CI		*t*-value	Type
				Lower Bound	Upper Bound		
Social influence→ Attitude→ Behaviour	0.6468 (0.000)	0.3280 (0.000)	0.3188 (0.000)	0.2242	0.4360	5.87**	Partial mediation
Self-efficacy→ Attitude→ Behaviour	0.5883 (0.000)	0.3166 (0.000)	0.2717 (0.000)	0.1910	0.3563	6.47**	Partial mediation

Notes: * p < 0.05, ** p < .01, ns – not significant

5.0 Research Implications

The purpose of the current study is to examine e-wallet usage among millennials in Malaysia, which is offered by the service providers in the country and the determinants influential driving an individual to use e-wallets. In terms of theoretical implication, this work contributes to theoretical framework development using the ASE model. Further, the research framework can be applied in behaviour studies, which are carried out to determine the acceptance of an individual for digital products as well as services and products.

Furthermore, this study adds to a new relationship between self-efficacy and millennials' usage behaviour towards e-wallets. From the theoretical standpoint, this research introduces an ASE model and incorporates a new variable, which is self-efficacy and adds the mediating role of attitude that enriches the literature on e-wallet usage in Malaysia. The research is based on the ASE model, which is a pioneering effort to use the aforesaid theory in the context of e-wallet usage.

Hence, this study makes an effort to contribute to the scarce literature on e-wallet usage behaviour on empirical grounds particularly; using ASE, a modified framework in the setting of e-wallet usage is an effort to improve the predictivity of factors by adding a mediating variable, which is attitude. The effects of the factors in the e-wallet setting are particularly sparse. Literature suggests that there are limited studies on e-wallet usage which warrants for the present study to be undertaken to reduce the gap and therefore contributing factors responsible for the behaviour of e-wallet usage are properly documented. All variables used in this study can explain one's usage behaviour such as attitude, social influence and self-efficacy. It is suggested by the findings that among all the determinants for e-wallet usage, self-efficacy turns out to be one of the most influential factors. The ASE model was effective in the e-wallet usage prediction.

Extricating the specific determinants that affect e-wallet usage behaviour including attitude, social influence and self-efficacy can offer a vibrant understanding of the association among factors and the definite effects that these factors have on behaviour. Hence, the results obtained can turn out to be appropriate for practitioners.

Moreover, brief implications may be described. Starting with attitude, it is found that attitude impacts e-wallet payment significantly. Hence, it is therefore important for policymakers to look into how novel digital payment apps are used by millennials. On that note, e-wallet payment operators may require to know their consumers who may be able to participate with new digital payment apps to estimate the demand for such innovative products that can be traced using the e-wallet app. Concerned with social influence in the current study impacts millennials' payment behaviour. On the same note, self-efficacy as reported in the findings directly affects payment usage behaviour and turns out to be an essential variable.

Likewise, attitude also significantly influences the relationship between social influence and self-efficacy as a mediator. Taking into consideration, the results that may be obtained using the ASE model it may be expected of digital payment gateways industry policymakers as well as stakeholders to look into factors, which significantly influence e-wallet payment behaviour, namely, self-efficacy, social influence and attitude. These factors may be considered prime reasons for an individual to use e-wallet payments among the millennials in Labuan and Kota Kinabalu, Malaysia. Hence, there may also be other factors responsible for e-wallet payment behaviour. In that, current research fills the research gap by contributing in terms of research framework incorporating the factors that may be responsible for e-wallet payment behaviour and extending the ASE model as a baseline model.

6.0 Conclusion

The study findings demonstrate that the ASE model is suitable in guiding the understanding of the contributing factors concerning millennials' e-wallet payment behaviour in a voluntary environment. Results obtained supported the model well, as all except one hypothesis were deemed to support the hypothesized pathways established under the hypotheses development section. The significant multiple regression suggested 61.4 per cent overall explanatory ability exhibited in the validated research model developed in this study, which also testified to the potential of the ASE model application in the digital payment context in Malaysia.

This study found that attitude, social influence and self-efficacy determine the actual behaviour of e-wallets among millennials. The mediating role of attitude was also testified in this work and found its significant role in the relationships between independent variables (social influence and self-efficacy) and e-wallet payment behaviour. Hence, this empirical outcome extends the application of attitude to include e-wallets in the current setting which improves its dynamic role not only as an exogenous variable but also as a mediating construct.

Although this study makes significant contributions, it has some limitations that should be addressed in follow-up studies. First, the locations of this investigation were Labuan and Kota Kinabalu in Sabah, Malaysia. When compared with residents in other Malaysian cities, the locals in these districts may have distinct conceptions of e-wallet payments, which is how our research was conducted. Future studies are anticipated to expand the findings by including additional respondents from various Malaysian districts. Second, this study identified three variables only in examining e-wallet payment behaviour and given the R^2, some potential variables were unexplored. Therefore, we comprehend that there may be additional variables that have an impact on e-wallet payment behaviour that were not identified in this study. Further empirical research is needed to identify and examine any other factors that may influence millennials to engage in the behaviour.

Despite the limitations mentioned, this study provides new insights into e-wallet payment behaviours among millennials in Malaysia after the occurrence of COVID-19. A useful conceptual framework extended from the ASE model is provided for future reference of future researchers to extend it as a baseline theory to different settings. Copious key aspects that affect how people use e-wallets to make payments have also been demonstrated empirically; fresh research on e-wallet payments can further hone in on these factors.

Furthermore, the current study has limited respondent selection due to its limited scope and goal. Future studies should not be confined to Malaysia but should examine comparable studies in other nations or locations. Extending the study beyond a particular geographical

location might give significant insights into the universality or regional differences of factors impacting millennial e-wallet usage. It enables a more in-depth study of global or regional changes in digital payment behaviour. To improve the generalizability and application of study findings, future studies must include a multi-country or cross-cultural approach. This larger viewpoint can help to provide a more comprehensive knowledge of the issue. This study is the first of its kind to examine ASE and actual behaviour, in terms of e-wallet payment behaviour.

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