

Predicting E-wallet Continuation Behaviour Among University Students: Testing an Integrated Theoretical Framework

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Abstract. This study examines the determinants of the continuation intention of e-wallet usage among university students with an integrated model from Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), and Expectation Disconfirmation Model (EDM). Data were collected from 200 university students in Malaysia using a structured questionnaire with validated measurement scales. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to test the proposed theoretical framework and hypothesised relationships. 58.1% of variance in e-wallet usage continuation intention is explained by the integrated model. Perceived ease of use and perceived usefulness significantly influenced attitude ($R^2=0.515$), while attitude and positive disconfirmation positively affected user satisfaction ($R^2=0.428$). Contrary to expectations, subjective norm did not significantly impact user satisfaction. Both user satisfaction and perceived behavioural control emerged as significant factors of continuation intention toward e-wallet usage among university students. E-wallet service providers should prioritize developing user-friendly interfaces, highlighting functional benefits, and ensuring positive user experiences to foster continued usage among university students. Technical support resources should be made readily available to enhance users' perceived behavioural control. This study adds to the digital payment adoption literature by empirically validating an integrated theoretical framework that explains e-wallet usage continuation intention among university students, a critical demographic for market growth. The findings advance understanding of the relative importance of cognitive, affective, and behavioural factors in sustaining e-wallet usage.

Keywords: E-wallet, Usage Continuation Intention, Technology Acceptance Model, Expectation Disconfirmation Model, Theory of Planned Behaviour

1. Introduction

Technology evolution has accelerated the growth of digitalisation of the business. This includes the cashless transactions that use e-wallets. E-wallet, which stands as Electronic Wallet is an application on an electronic device that enables cashless transactions of goods and services between two parties. It can also be considered as a digital card that performs similar functions as a bank card (Hassan et al., 2021). The advancement of technology has leveraged e-wallets by providing a range of valuable assistance to users which includes quick and convenient digital payments, allowing users to make transactions seamlessly via smartphones or other connected devices. This makes transactions faster, easier and more efficient. It has thus become one of the popular and most convenient payment tools for customer use.

Malaysians' usage of e-wallets has gained its attention publicly after Interoperable Credit Transfer Framework (ICTF) been issued by Centra Bank Malaysia in 2018. ICFT offers infrastructure that allows joint transactions among financial institutions and non-financial institutions like e-wallets. It was reported that Malaysia has more than 20 million mobile cashless payment users in 2023 which shows an increase of more than 2 million users from 2022 (Siddharta, 2025). Pandemic of Covid-19 has also driven its growth where the percentage of Malaysian e-wallet users has increased from 25% in 2019 to 63% in 2023 (Oppotus, 2024). This statistic has reflected an emergence of the cashless payment in Malaysia.

Multiple e-wallet apps have been introduced immediately after the effective of ICFT in 2018. According to The Malaysian Reserve (2022), a study by Fintech News Malaysia shows that 53 e-wallets available in the country. Touch'n Go, GrabPay, Boost, and other e-wallet apps are among those available. Among these e-wallets, Touch 'n Go is ranked as the most preferred one. The availability of multiple e-wallet apps to customers has resulted the rivalry among the e-wallet providers.

From a marketing perspective, user satisfaction is vital in gaining market competitiveness advantages which will impact the existing users to stay meanwhile to attract new users (Tandon et al., 2017). Study by Goh et al. (2020) further supports this view, pointing that there is a higher tendency for users to attach to the existing service if they are happy with it. For e-wallet usage, users are always looking for an effective and efficient app for their transactions. Retaining existing users and attracting new ones are essential for e-wallet providers to maintain business competitiveness. The importance of studying usage continuation intention among e-wallet users is underscored by the need to understand the factors that drive satisfaction and long-term user engagement.

The antecedents which influence users' continuance intentions to use technology have been well studied in existing literature. Nevertheless, there is scant empirical literature examining the effect of perceived ease of use and perceived usefulness on attitude (Ariffin et al., 2021). Most studies investigating these associations cover general technology use, e.g., telehealth and electronic libraries (Toros et al., 2024; Wiprayoga et al., 2023). Therefore, the effect of perceived ease of use and perceived usefulness on attitudes towards e-wallets thus, becomes worthy of investigation.

Besides, many research studies are making use of theoretical models to study the factors influencing the continuance intentions relating to use of e-wallets. Some research focuses on just one theory. Moorthy et al. (2022) use the Unified Theory of Acceptance and Use of Technology (UTAUT), while Tay et al. (2022) use the Technology Acceptance Model (TAM). Similarly, Lim et al. (2023) apply UTAUT 2 to their studies. There are also studies that mix two theories to explore this topic. For instance, Rahmayanti et al. (2021) combine TAM with the Theory of Reasoned Action (TRA). Reza et al. (2024) use a combination of UTAUT and the Expectation Confirmation Model (ECM). Akter et al. (2023) merge TAM with the Theory of Planned Behaviour (TPB). Rahman and Ariffin (2022) believe using three models together—TAM, the Expectation Disconfirmation Model (EDM), and TPB—can explain consumers' intention to continue using e-wallets. Ariffin et al. (2021) tested the effectiveness of these models. Despite these studies, research that combines more than two theories is still limited.

Ariffin et al. (2021) and Rahman and Ariffin (2022) suggested that there is a need for future research to integrate multiple theoretical frameworks to have a more comprehensive understanding of the usage continuation intentions towards e-wallet. This study addresses this gap by adapting the research framework proposed by Ariffin et al. (2021) by integrating TAM, EDM and TPB to explain the usage continuation intention towards e-wallet. This study intends to provide unique insights by examining the e-wallet usage continuation intentions among university students, diverging from the study by Ariffin et al. (2021), who focused on general consumers. As reported by Rakuten Insight, approximately 94% of Malaysians aged 16 to 24 use e-wallet for payments (Statista Research Department, 2023). This means that nearly 9 in 10 young people in this group rely on e-wallet. Many university students in Malaysia are within this age range and they are also a part of the tech-savvy population likely to embrace the digital financial services (Amin et al., 2024). Therefore, understanding the needs of these young users' e-wallet adoption not only enhance their technological usage but the benefits for economic in the e-wallet context (Yang et al., 2021; Shanmugavel et al., 2024). Therefore, the objective of this study is to investigate e-wallet usage continuance intention among university students with an integrated model.

2. Literature Review

2.1. Integrated Theoretical Framework

The rationale for using an integrated model of TAM, TPB and EDM in this study is to have a better understanding the behavioural intention of continue using e-wallet among university students as suggested by (Bommer et al., 2022). By examining different decision-making factors, it will provide better knowledge on the reasons for the usage continuation intention among university students which in turn enhance their experience to maintain their loyalty.

TAM, introduced by Davis (1989), helps to understand why people accept new technology by focusing on two key ideas: perceived ease of use and perceived usefulness. These ideas explain how easy a technology is to use and how beneficial it seems. They are crucial factors in encouraging someone to adopt new technology. TAM has been effective in explaining why people use technologies, such as e-wallets. Recent studies by Lee and Thoo (2022), and Tay et al. (2022), support this. Another study by Rosli et al. (2023) combined TAM with Self-Determination Theory and Self-Efficacy, exploring the e-wallet acceptance among Gen Z. This demonstrates that TAM can be tailored to different age groups and preferences.

Another model is EDM, which help to understand why people are satisfied with their purchases and whether they will reuse a product. According to EDM, a consumer will feel satisfied if a product exceeds their expectations after purchase, (Oliver, 1980). Positive user satisfaction that developed will lead to a greater chance of continued use. Studies by Foroughi (2019) and Ariffin et al. (2021) applied EDM to understand the ongoing use of e-wallets among Malaysian. These studies show that EDM effectively explains user satisfaction and continued use towards e-wallets.

The last model is TPB, introduced by Ajzen (1991). It suggests a person's intention to do something depends on attitude, subjective norm and perceived behavioural control. This means how a person thinks or feels about something, what they believe others expect, and how much control they think they have can influence their decisions in performing a behaviour. TPB has been widely used in the studies like to e-wallets adoption (Ashour et al., 2023; Ariffin et al., 2021). This shows that TPB is useful in explaining e-wallets reuse intention.

2.2. Usage Continuation Intention

Fishbein and Ajzen (2011) defined intention to continuous use as "a measure of the strength of one's intention to acquire a goods". Continuance intention can also be referred to as an individual's desire to

continue engaging in a certain activity or behaviour (Amoroso & Lim, 2017). Bhattacharjee (2001) further reinforced this by asserting that customers who experience and are pleased with the system's performance will have a greater likelihood of continuing using the system. This highlights the importance of user satisfaction in driving usage continuation intention.

Yapp et al. (2022) and Tay et al. (2022) examined the factors on usage continuation intention of e-wallet users; however, these studies did not apply any theoretical model to explain usage continuation intention of e-wallet users. In contrast, Reza et al. (2024) and Moorthy et al. (2022) employed the UTAUT 1 model to explain e-wallet usage continuation intention, albeit from different perspectives—merchants and general users, respectively. Other study, like Lim et al. (2023) leveraged UTAUT 2 to evaluate post-COVID-19 usage continuance intention in Malaysia, demonstrating relevancy of UTAUT 2 in this contemporary context. Akter et al. (2023) and Rahmayanti et al. (2021) took a more integrative approach by combining two theoretical models: TAM with TPB and TAM with TRA, to predict e-wallet continuous usage intentions. These previous studies highlight the value of combining multiple theoretical models to gain a more comprehensive understanding of user behaviour.

2.3. User Satisfaction

User satisfaction refers to “the summary of psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer’s prior feelings about the consumption experience” (Oliver, 1980). Slack and Singh (2020) described user satisfaction as how well goods or services operate to meet or beyond the expectations of user. Customer loyalty will be established if they are satisfied with the services (Santouridis & Trivellas, 2010).

Previous studies have provided empirical evidence to confirm the role of user satisfaction in influencing continuance intention. Various determinants such as performance expectancy, ease of use, course content, customer engagement, and technology self-efficacy are instrumental in shaping this satisfaction (Oloveze et al., 2022; Garg & Sharma, 2020; Seridaran et al., 2024). User satisfaction and usage continuation intention was discovered to positively associated, reinforcing the argument that satisfied users are more likely to continue using a service (Kurniawan et al., 2024; Nabilla & Tohang, 2020). This highlights the important role of user satisfaction in sustaining users towards e-wallet.

2.4. Attitude

Ajzen (1991) described attitude as “an individual’s positive or negative feelings about performing the target behaviour” that highlight personal beliefs and evaluation in shaping attitudes. As argued by Halim et al. (2021), attitude is the outcome of a combination of one person's belief in behavioral outcomes associated with one conduct. It can also be the favourable or unfavourable assessment of these outcomes as highlighted by Maloney et al. (2013).

The role of attitude in the studies of technology acceptance is highly significant. Previous studies ascertain that attitude as emotional responses—positive or negative—towards a particular action, which is also an important element discovering the willingness to continuously use a certain technology (Rahmayanti et al., 2021; Halim et al., 2021). Halim et al. (2021) underscored that individuals would be continuing to use e-wallets if they felt positive recognition with them, such as like, preference, or joyful sensations. Moreover, the strength of this association is amplified when users adopt an emotive or affective approach towards using tools like e-wallets. Additionally, attitude was discovered to have a favourable and substantial effect on user satisfaction that enhances the continued usage intention (Ofori et al., 2023; Rahmayanti et al. 2021; Wahab & Salahudin, 2024).

2.5. Subjective Norm

Ajzen (1991) referred subjective norm as “the perception of a person thought and opinion of the individual’s action and decision making” by. As per Lai (2017), subjective norms were revealed as a major factor of fragile behaviour intention. Koenig-Lewis et al. (2015) further opined that younger users

have a greater likelihood of being affected by other people in adopting and accepting m-payment services. This argument confirms that social influence plays a role in technology adoption.

Ferrynela et al (2022) asserted that users will continue using the products or services if they are happy with it. This indicates that when users are happy with a service, they will recommend it to their friends and family. Prior studies support this view, showing that subjective norm is positively associated with user satisfaction (Ariffin et al., 2021; Rahman & Ariffin, 2022).

2.6. Perceived Behavioural Control

TPB defines perceived behavioural control as “people’s perception of ease or difficulty in performing the behaviour interest” (Ajzen, 1991). This means the ability to execute the behaviour of a person is influenced by the amount of control that might assist or prevent performance. Nur and Dewanto (2022) in their study on the usage intention of PayLater app, found that perceived behavioural control enhances the behavioural intention. This confirms the role of perceived behavioural control in shaping behavioural intentions.

According to Sharma et al. (2018), when people will continue using the technology if they can control over their usage, specifically for the apps like e-wallets, which require users to be actively involved. When people believe they know how to use the apps, they will have confidence which will make them want to use the apps repeatedly. Study by Bousnina and Ettis (2016) confirmed that perceived behavioural control is associated with usage intention of bank card for the payment. Similar findings also discovered by other studies, such as Hsieh et al. (2022), Hoque et al. (2024), and Li et al. (2022). This means the perceived behavioural control over a usage of technology will strengthen people's intentions to engage with it.

2.7. Disconfirmation

Disconfirmation is a key concept from Expectation Disconfirmation Model (EDM). It describes the difference between what customers expect before buying something and what they experience afterward (Liao et al., 2007). This idea is important for comprehending customer satisfaction with their purchases. Lin et al. (2018) pointed out that disconfirmation plays a role in decision-making processes and affects satisfaction levels. When a product or service falls short of a person's expectations, it leads to dissatisfaction, known as disconfirmation (Rahman & Ariffin, 2022).

Wright & Nishii (2007) showed that when users’ expectations are not met while using a technology, they experience negative disconfirmation. This will then lead a drop in their satisfaction. Penning de Vries and Knies (2022) illustrated that positive disconfirmation will drive the users’ satisfaction if their usage experience exceeds their expectations. Numerous studies confirm that positive disconfirmation boosts user satisfaction (Lin et al., 2018; Penning de Vries & Knies, 2022).

2.8. Perceived Ease of Use

Perceived ease of use, a factor of TAM is “the individual’s perception that using a certain system is effortless or simply easy to do” (Davis, 1989). This concept is fundamental in determining user acceptance of technology. The design of a technology application may hinder the adoption of a user if it is perceived as difficult to use. As argued by Ariffin et al (2021), a positive attitude will be resulted if the usage of e-wallets eases and speed up the payment whenever there is a transaction.

According to Hidayat et al. (2021) and Khiong et al. (2022), the easiness of using a program is attributable to the attitude toward mobile payments. Rahmayanti et al. (2021) asserted that the greater the attitude about adopting e-wallets of the users if they perceived it is easy to use. Prior studies further support this view, demonstrating perceived ease of use significantly affects attitude (Toros, et al., 2024; Wiprayoga et al., 2023).

2.9. Perceived Usefulness

Perceived usefulness is also a factor of TAM that described as “the potential consumer’s subjective belief that using a particular system would enhance his or her job performance in an organizational context” (Davis, 1989). Ariffin et al. (2021) argued that perceived usefulness can be referred to as a certain technology adoption that enables a person to attain a specific outcome. This indicates that an e-wallet will be used if an individual realised how the usage benefits them (Rahmayanti, 2021).

Kustono et al. (2020) in their work, found that perceived usefulness influences attitudes towards usage of e-wallet. The users will have a positive attitude if they believe that adopting e-wallet would be helpful, improve productivity in daily operation and enhance quality of payment transactions. Previous works provide evidence to support the strong connection between perceived usefulness and user attitudes towards e-wallets usage (Lee & Jais, 2022; Liesa-Orús et al., 2023; Mulyati et al., 2023).

Based on the literature reviewed, the research framework (see Figure 1) and the following hypotheses have been established.

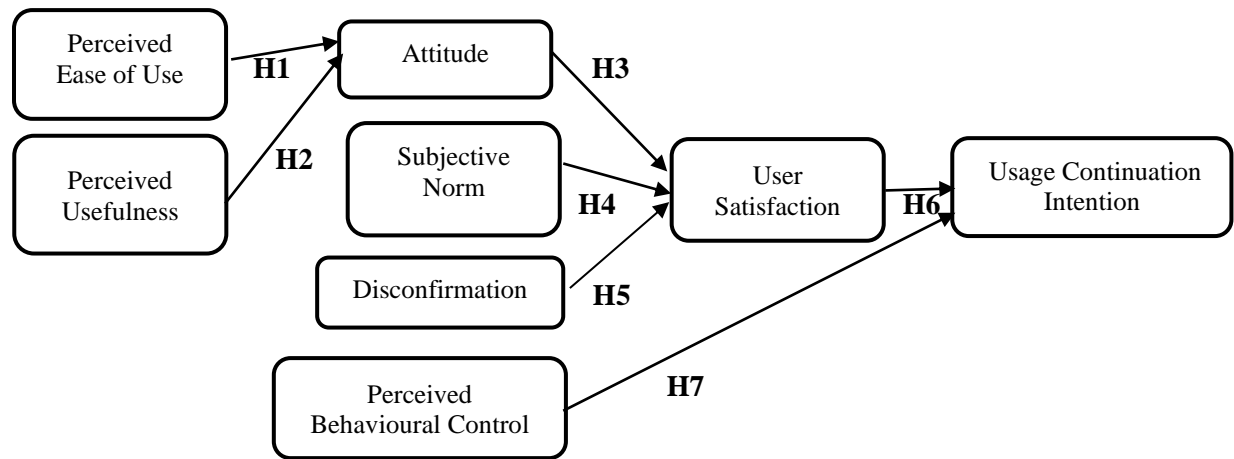


Fig. 1: Research Framework of this Study

H1: Perceived ease of use positively influences attitude towards e-wallet.

H2: Perceived usefulness positively influences attitude towards e-wallet.

H3: Attitude towards e-wallet positively influences user satisfaction.

H4: Subjective norm positively influences user satisfaction.

H5: Disconfirmation positively influences user satisfaction.

H6: User satisfaction positively influences e-wallet usage continuation intention.

H7: Perceived behavioural control positively influences e-wallet usage continuation intention.

3. Research Method

The study was carried out in a private university locally. G*Power analysis with effect size of 0.15, alpha value of 0.05 and statistical power value of 0.8 indicates the required minimum sample size is 77. Hence, 200 university students were recruited by using convenience sampling. The use of convenience sampling in this study is mainly due to the time constraints of the study, which was conducted over a four-month period. As remarked by Sekaran and Bougie (2013), convenience sampling is useful since it allows researchers to gather data efficiently particularly when the time and resources are tight. Furthermore, insufficient information for the sampling frames for specific populations, such as

university students who are e-wallet users, further supports the use of convenience sampling as highlighted by Hulland et al. (2017) and Sarstedt et al. (2017).

The survey method, using a set of self-administered questionnaires, was employed to collect data for this study. Informed consent, which includes the confidentiality of the collected information, anonymity of the participants, and data for academic purposes was provided on the cover page of the questionnaire for ethical consideration. The questionnaire comprised the profile of the respondents and all the variables. All the indicators for the variables were adapted from previous studies: usage continuation intention (Yapp et al., 2022), user satisfaction (Yang et al., 2021), attitude, subjective norm, and perceived behavioral control (Halim et al., 2021), disconfirmation (Ladkoom & Thanasopon, 2018), and perceived ease of use and perceived usefulness (Meyta Dewi et al., 2021).

Google Forms was utilised for data collection as it is easy and efficient to share among the university students. Pilot study was conducted with 30 university students with the purpose of checking the research instruments that worked well and could be answered by the university students (Baker, 1994). In the data collection process, the questionnaire was shared among university students through social media platforms like Facebook and WhatsApp as this will help to get the university students easily and to have a prompt response from them.

CMB can cause the misleading association between variables that may affect the validity of research findings and result in incorrect conclusions (Podsakoff et al., 2003). This study adopted both procedural and statistical remedies to reduce the tendency of having CMB problem (Podsakoff et al., 2003; Tehseen et al., 2017). First, different points of Likert scales such as a 5-point scale for independent variables and a 7-point scale for dependent variables were applied. Second, Harman's single-factor test, with a less than 50% variance in the percentage of variance for the first factor indicating CMB, is not a problem in the data.

Partial Least Squares Structural Equation Modeling (PLS-SEM) was used for data analysis. PLS-SEM was appropriate as it focuses on prediction which to understand how different factors might influence one another. Therefore, PLS-SEM which has advantages in prediction and flexibility made it a better fit for this research as compared to Covariance-Based SEM (CB-SEM) (Hair et al., 2022). In PLS-SEM, the validity of the variables was assessed in the measurement model, and all relationships were tested in the structural model.

4. Findings

As displayed in Table 1, 121 of the 200 (60.5%) respondents are female and 79 were male (39.5%). The largest age group is 20 to 22 with 64%. It is followed by the age group of 23 to 24 (24%), age group of 18 to 19 (8.5%) and age group of 25-26 (3.5%). 85% of the respondents are Chinese, Indian (9%), Malay (5%) and other (1%). In terms of the experience of using e-wallet, 42.5% of them have been using e-wallet for the transaction for one to two years, 37.5% for three to four years, 15% for more than four years and remaining for less than a year.

Table 1: Demographic Profile of the Respondents

Variables		Frequency	Percentage (%)
Gender	Male	79	39.5%
	Female	121	60.5%
Age	18 to 19	17	8.5%
	20 to 22	128	64%
	23 to 24	48	24%
	25 to 26	7	3.5%
Race	Malay	10	5%
	Chinese	170	85%
	Indian	18	9%

	Other	2	1%
Experience of using E-Wallet (in year)	< 1	10	5%
	1 to 2	85	42.5%
	3 to 4	75	37.5%
	> 4	30	15%

$N = 200$

4.1. Measurement Model

In the measurement model, the criteria to pass the convergent validity in PLS-SEM are factor loadings are to above 0.70, average variance extracted (AVE) to above 0.50, and the composite reliability (CR) to above 0.70 (Hair et al., 2022). As displayed in Table 2, the factor loading for all the indicators is from 0.65 to 0.953, CR is from 0.9 to 0.971 and AVE is from 0.645 to 0.893. The items with the factor loadings below 0.7 but more than 0.6 are retained due its content contribution (Byrne, 2016). This suggests the establishment of the convergent validity of the constructs. Heterotrait-monotrait ratio (HTMT) criterion was used to assess discriminant validity by comparing the HTMT value to a threshold of 0.85 or 0.90 (Henseler et al., 2015). Table 3 illustrates the value of HTMT for all the constructs, that from 0.44 to 0.767. All the values are lower than the proposed value of $HTMT_{0.85}$ (Franke & Sarsterd, 2019) implying the discriminant validity is acceptable.

Table 2: Assessment of Convergent Validity

Construct	Item	Factor Loading	CR	AVE
Attitude	ATTIT1	0.837	0.926	0.758
	ATTIT2	0.833		
	ATTIT3	0.901		
	ATTIT4	0.908		
Disconfirmation	DIS1	0.876	0.917	0.787
	DIS2	0.889		
	DIS3	0.896		
Perceived Behavioural Control	PERBC1	0.87	0.937	0.749
	PERBC2	0.867		
	PERBC3	0.871		
	PERBC4	0.872		
	PERBC5	0.848		
Perceived Ease of Use	PEREOU1	0.876	0.917	0.733
	PEREOU2	0.869		
	PEREOU3	0.84		
	PEREOU4	0.84		
Perceived Usefulness	PERUS1	0.771	0.9	0.645
	PERUS2	0.65		
	PERUS3	0.833		
	PERUS4	0.855		
	PERUS5	0.886		
Subjective Norm	SUBNO1	0.887	0.932	0.774
	SUBNO2	0.901		
	SUBNO3	0.872		
	SUBNO4	0.859		

User Satisfaction	User1	0.932	0.971	0.893
	User2	0.953		
	User3	0.946		
	User4	0.949		
Usage Continuation Intention	UCINT1	0.888	0.956	0.846
	UCINT2	0.947		
	UCINT3	0.919		
	UCINT4	0.923		

Table 3: Discriminant Validity using HTMT Criterion

	1	2	3	4	5	6	7	8
1. Attitude								
2. Usage Continuation Intention	0.709							
3. Disconfirmation	0.714	0.525						
4. Perceived Behavioural Control	0.75	0.691	0.72					
5. Perceived Ease of Use	0.689	0.545	0.714	0.686				
6. Perceived Usefulness	0.767	0.578	0.715	0.696	0.738			
7. Subjective Norm	0.699	0.44	0.584	0.585	0.503	0.632		
8. User Satisfaction	0.689	0.758	0.552	0.659	0.509	0.561	0.491	

4.2. Structural Model

The outcomes from the structural model are displayed in Table 4. All the values of the variance inflation factor (VIF) were below 5, suggesting that multicollinearity issues among the factors are absent (Hair et al., 2022). The R-square values revealed are 0.515 for attitude, 0.428 for user satisfaction, and 0.581 for usage continuation intention. This means the research model explains 51.5% of the variance in attitude, 42.8% in user satisfaction, and 58.1% in usage continuation intention. The remaining percentages are due to other factors not included in the research model. As per guidelines by Chin (1998), these R-square values are considered moderate, with 0.67 indicating substantial, 0.33 indicating moderate, and 0.19 indicating weak effects.

The critical value approach was used to assess the hypotheses. The t-values for perceived ease of use (3.746), perceived usefulness (7.204), attitude (4.77), disconfirmation (1.699), user satisfaction (6.112), and perceived behavioural control (3.795) exceeding 1.6449 ($\alpha = 5\%$). This indicates that perceived ease of use and perceived usefulness significantly affect attitude. Attitude and disconfirmation positively influence user satisfaction. In contrast, subjective norms, with a t-value of 0.764, do not influence user satisfaction. Meanwhile, user satisfaction and perceived behavioral control affect usage continuation among university students towards e-wallets. Thus, all the hypotheses, H1 to H7 accept H4 are supported by the findings. Perceived usefulness ($\beta = 0.487$) has a stronger effect on attitude compared to perceived ease of use ($\beta = 0.301$). Attitude ($\beta = 0.5$) has a stronger effect on user satisfaction compared to disconfirmation ($\beta = 0.156$). Lastly, user satisfaction ($\beta = 0.524$) influences usage continuation intention more than perceived behavioral control ($\beta = 0.317$).

According to Cohen (1988), effect size that explains the practical significance of research findings are small for 0.02, medium for 0.15 and large for 0.35. Referring to Table 4, the effect size (f^2) values for all significant paths are as follows: small effect sizes for perceived ease of use (0.11), disconfirmation (0.025), and perceived behavioral control (0.149); medium effect sizes for perceived usefulness (0.289) and attitude (0.206); and a large effect size for user satisfaction (0.405).

Table 4: Path Coefficient Analysis

Hypothesis	Relationship	Std Beta	Std Error	t-value	p-values	R ²	f ²	VIF
H1	Perceived Ease of Use -> Attitude	0.301	0.08	3.746**	0.000	0.515	0.11	1.691
H2	Perceived Usefulness -> Attitude	0.487	0.068	7.204**	0.000		0.289	1.691
H3	Attitude -> User Satisfaction	0.5	0.105	4.77**	0.000	0.428	0.206	2.121
H4	Subjective Norm -> User Satisfaction	0.064	0.083	0.764	0.222		0.004	1.733
H5	Disconfirmation -> User Satisfaction	0.156	0.092	1.699*	0.045		0.025	1.737
H6	User Satisfaction -> Usage Continuation Intention	0.524	0.086	6.112**	0.000	0.581	0.405	1.621
H7	Perceived Behavioural Control -> Usage Continuation Intention	0.317	0.084	3.795**	0.000		0.149	1.621

Note: *p-value <0.05, **p-value<0.01

5. Discussion

Perceived ease of use was discovered to positively influence attitude towards e-wallets usage. This is in accordance with the findings by Hidayat et al. (2021), Khiong et al. (2022), and Rahmayanti et al. (2021), which also found a positive association between perceived ease of use and attitude towards e-wallet usage. In this study, perceived ease of use was measured to the extent to which the e-wallet application is easy to learn and can be used anywhere and anytime. The finding demonstrates that user-friendly and accessible e-wallet apps will establish a positive attitude among university students. Malik et al. (2023) explained that people will have a better attitude toward e-wallets if they think the app is easy to use and can be easily understood. Similarly, Yang et al. (2021) discovered that if users believe e-wallet usage is simple and convenient, they tend to view it more favourably. In other words, if navigating an app is straightforward, more people will want to use it. This is beneficial for both the people who use the apps and the developers who create them.

The analysis from this research indicates that there is a positive association between perceived usefulness and attitude. This is in line with the findings by Lee and Jais (2022), and Kustono et al. (2020). These studies have showed that when people consider e-wallets helpful, they tend to use them more positively. In essence, if an e-wallet allows users to complete tasks quickly and easily, it boosts their opinion of the service. This is particularly true for university students, who appreciate apps that make transactions quicker and simpler. Rahmayanti et al. (2021) and Malik et al. (2023) also supports this, showing that when users find e-wallets efficient and effective, they will tend to have a better attitude toward them. Recognising these patterns can aid in designing e-wallets that attract users by emphasizing speed and efficiency.

Attitude towards e-wallet was tested to positively affect user satisfaction. Research by Ofori et al. (2023) and Wahab and Salahudin (2024), highlight this strong link between attitude and satisfaction. University students in this study perceived using e-wallets as a smart and beneficial choice. This positive view boosts their satisfaction. Ariffin et al (2021) also found that a good experience with e-wallets often leads to higher satisfaction. Ilieva et al. (2023) also confirmed that positive attitudes result in greater satisfaction among e-wallet users. Clearly, when people approach e-wallets with a positive attitude, they are more likely to enjoy using them and feel satisfied with their experience.

Subjective norm was tested to have no noticeable impact on user satisfaction. This result seems to contradict the findings arrived by Ariffin et al. (2021), which showed that subjective norm had positive relationship on user satisfaction. This study shows that user satisfaction among university students is not affected by the opinions, perceptions, or expectations of others. Instead, their satisfaction could be

predominantly driven by their personal experience and expectations from using e-wallets. This implies the influence of surrounding individuals appears negligible in shaping their satisfaction levels, which highlighting the primacy of personal experience may over external social influences. This aligns with the study by Rahman and Ariffin (2022), who found that subjective norm does not affect users' behavioural intentions. Perhaps future studies could reexamine this relationship.

The results of this study show that disconfirmation has a notable impact on user satisfaction. This is like the study by Ariffin et al. (2021), who indicated that positive disconfirmation affects user satisfaction, emphasising users' positive experience led to greater satisfaction when using e-wallets. This study illustrates that satisfaction level will increase when users experience positive disconfirmation for using e-wallets—where their expectations are exceeded. Consequently, this heightened satisfaction boosts the likelihood of continued e-wallet usage. As emphasized by Malik et al. (2023), positive disconfirmation contributes to enhance user satisfaction which in turn encourages usage continuation of e-wallet. Hence, positive disconfirmation regarding e-wallet usage is crucial for developing a high level of user satisfaction.

User satisfaction was found to positively associated with usage continuation intention towards e-wallet, thereby reinforcing the conclusions of previous research by Kurniawan et al., (2024), and Nabilla and Tohang (2020). These studies provided empirical evidence that user satisfaction significantly boosts the willingness to continue using e-wallets. This positive correlation illustrates that the higher the users' satisfaction, the higher willingness to continue using the e-wallet. This means if users experience wonderful usage towards e-wallets, they will feel more satisfied. This satisfaction will lead to their higher reuse intention towards e-wallets in the future. According to Sanesh and Thakur (2025), people will continue using e-wallets and stay interested when they have positive experiences with them. Therefore, it is crucial to focus on the needs of the users to encourage their reuse intention towards e-wallet applications. Maintaining high user satisfaction is the key to retain the ongoing engagement with these digital wallet services.

Lastly, the finding discovered that perceived behavioural control has a positive impact on usage continuation intention towards e-wallet. Researchers such as Hoque et al. (2024) and Li et al. (2022) found similar results. This study shows that university students are more likely to continue using e-wallets if they get necessary support like technical help and access to important software and hardware. This underlines the importance of strong technical support to motivate ongoing e-wallet use. This aligns with findings from Yang et al. (2021), who stressed that providing enough resources and assistance is crucial in order to have users' long-term engagement with e-wallets. Therefore, the role of perceived behavioural control as a predictor of continued e-wallet use is significant and should not be ignored.

6. Conclusion

This study advances our understanding of e-wallet usage continuation intention among university students by empirically testing an integrated theoretical framework. Our findings confirm that perceived ease of use and perceived usefulness significantly influence attitude toward e-wallet usage, which in turn positively affects user satisfaction. Interestingly, while positive disconfirmation enhances user satisfaction, subjective norm does not emerge as a significant predictor – suggesting that university students' satisfaction with e-wallets stems primarily from personal experience rather than social influence. Ultimately, both user satisfaction and perceived behavioral control strongly determine continuation intention, explaining 58.1% of its variance.

Theoretically, this research contributes to digital payment literature by validating the complementary roles of TAM, TPB, and EDM constructs in explaining e-wallet continuation behavior. The non-significant relationship between subjective norm and satisfaction challenges assumptions about social influence among young adults and warrants further investigation.

For practitioners, our findings emphasise the importance of designing intuitive interfaces with clear functionality, ensuring positive user experiences that exceed expectations, and providing adequate technical support. E-wallet providers should focus on communicating tangible benefits and creating seamless user experiences to foster loyalty among university students – a demographic that represents both current and future regular users of digital payment systems.

Several limitations should be acknowledged. The convenience sampling method and demographic composition limit generalisability beyond the study population. Future research should employ probability sampling techniques with more diverse demographics. Additionally, cross-sectional design cannot capture changes in continuation intention over time; longitudinal studies would provide deeper insights into how these relationships evolve. Future research might also explore moderating variables such as financial literacy, security concerns, and reward systems that may influence the strength of relationships in the model.

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