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Determinants of User Loyalty towards Touch 'n Go eWallet in Malaysia: An Extended Technology Acceptance Model Perspective

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Abstract

The study investigates the key factors that influence user loyalty toward Touch 'n Go e-Wallet among Malaysian users, focusing on e-trust, e-service quality, perceived usefulness, and perceived ease of use. A quantitative approach was employed using an online survey of 370 active users with data analyzed using the Social Science Statistical Package (SPSS) and Smart PLS 4.0. The findings showed that e-service quality and perceived usefulness have significant positive effects on customer loyalty whereas e-trust and perceived ease of use show no significant influence. These findings suggest that enhancing service reliability, responsiveness, and functional value is critical for strengthening user loyalty in e-wallet platforms. The study provides practical insights for digital payment providers seeking to improve retention in the competitive Malaysian fintech landscape.

Keywords: Touch' N Go E-wallet, Customer Loyalty, E-Trust, E-Service Quality, Perceived Usefulness, Perceived Ease of Use

Introduction

Malaysia has emerged as one of the leading countries of e-wallet adoption, experiencing a substantial rise in digital payment usage in recent years (Yunoh et al., 2023). As a part of Malaysia's advanced cashless payment systems, the Touch' N Go e-wallet was introduced in 2017. Initially developed to streamline toll and public transport payments, the e-wallet has since evolved into a multifunctional digital payment platform, enabling users to conduct online shopping, bill payments, and in-person transactions (Touch' N Go, 2024). Nowadays, e-wallets have become more and more popular in the rapidly evolving world of digital payment due to their quickness and ease of use (Alam et al., 2021). E-wallet applications have become widely utilized for various transactions, including online shopping, bill payments, in-

store purchases, and food delivery. The convenience offered by e-wallets has led more consumers to prefer mobile payment options for their everyday needs (Singh, 2019).

TNG E-Wallet has emerged as one of the leading e-wallets in Malaysia, thanks to collaborations with various merchants and the incorporation of services such as PayDirect and RFID toll payments. The growth in e-wallet adoption in Malaysia can be attributed to technological advancements, supportive government policies, and an increasing preference for cashless transactions (Gan et al., 2023). The government's support for e-wallet payments plays a crucial role in driving their adoption in Malaysia. Initiatives like e-Tunai Rakyat, launched in 2020, provided financial incentives to motivate Malaysians to utilize e-wallets (Fong, 2024). The Malaysian government's goal of establishing a cashless society by 2025 has spurred investment in digital payment infrastructure, further encouraging both businesses and consumers to embrace e-wallets. With the Touch' N Go e-wallet, consumers can make faster and more convenient payments without the use of cash or credit cards by executing transactions through mobile applications.

Given the rapidly evolving landscape of financial transactions driven by technological advancements, it is increasingly vital to grasp the foundations of customer loyalty (Gomber et al., 2018). Additionally, the results of this study could promote the development of new theoretical frameworks that integrate customer loyalty concepts with recent technological advancements in the financial sector. Future investigations could utilize these frameworks to explore customer behavior in fintech offerings or assess loyalty across various digital payment alternatives (Alkhwaldi et al., 2022). Subsequently, the research may highlight existing gaps in the literature, prompting further exploration of the sociological and psychological aspects of e-wallet usage. Ultimately, this will enhance the broader disciplines of marketing and digital finance.

This research holds considerable importance for consumers as it seeks to enhance their experiences with e-wallet payment methods by shedding light on the key factors that affect customer loyalty. Equipped with this information, consumers can opt for e-wallets that prioritize security, user experience, and customer support, ultimately leading to a more satisfying digital payment journey (Abdul-Halim et al., 2022). This research is poised to motivate developers to enhance their offerings in a bid to attract and retain users. Overall, improving customer appliance, implementing appealing rewards programs, and enhancing functionality could significantly elevate customer loyalty (Rane et al., 2023). Additionally, by recognizing the significance of trust and perceived usefulness in e-wallet loyalty, consumers may be more inclined to engage with companies that showcase transparency and prioritize user safety. Therefore, the study offers advantages to all stakeholders by enhancing customer awareness and fostering a more competitive landscape within the e-wallet sector.

Literature Review

Technology Acceptance Model (TAM)

This research utilized the Technology Acceptance Model (TAM) to explore the factors affecting customer loyalty towards the Touch' N Go E-wallet payment system. The Technology Acceptance Model (TAM), developed by Davis in 1989, is an information systems theory that explains how individuals begin to embrace and utilize new technologies, and it is recognized as a valuable tool for understanding technology adoption (de Camargo Fiorini, 2018; Ma &

Liu, 2004). Besides that, the Technology Acceptance Model (TAM) proposes that a user's acceptance of technology is impacted by their opinions regarding its practicality and usability (Davis, 1989).

The concept rests on two key principles that affect attitudes toward technology and its actual usage: perceived usefulness (PU) and perceived ease of use (PEOU) (Ma & Liu, 2004). Perceived Usefulness refers to the extent to which an individual believes that using a particular technology will enhance their performance (Caffaro et al., 2020). This perceived usefulness plays a crucial role in decision-making by illustrating how effectively the technology allows users to accomplish tasks more quickly and with reduced effort. The extent to which a technology can improve user performance significantly influences its adoption rate (Davis, 1989). Furthermore, perceived ease of use refers to the extent to which customers view a particular technology as user-friendly and requiring minimal effort (Visakha & Keni, 2022). Perceived ease of use encompasses the situation in which an individual feels that utilizing a specific system demands little to no effort and that it is easily comprehensible to users (Saniyyah & Hariyana, 2024). Individuals are more likely to engage with technology if they view it as user-friendly and the opposite is also true. The fundamental premise of the Technology Acceptance Model (TAM) is that the greater users perceive an application to enhance their performance and the less effort required to use the application, the greater the likelihood of its adoption. Moreover, the Technology Acceptance Model (TAM) offers a solid theoretical basis for comprehending and predicting technology adoption behavior (Pertiwi et al., 2020).

The Technology Acceptance Model (TAM) has been widely applied to examine individuals' readiness to embrace new technologies. The research conducted by Azmee (2024) regarding e-wallet adoption is grounded in the Technology Acceptance Model (TAM). Initially formulated to anticipate the adoption and use of information technology in business contexts, TAM has evolved into a widely adopted model that highlights the impact of attitudes on people's intentions to engage with specific technologies or services. It is a robust, reliable, and effective model for predicting user adoption across various technological domains (Azmee, 2024).

Customer Loyalty

According to Ajina (2023), the process of buying a particular product as a result of a customer's dedication to it is known as customer loyalty. Customer loyalty is the likelihood that customers consistently select a specific company's products or services in spite of the presence of other companies in the market (Joudeh et a., 2023). Customer loyalty is a purchasing habit that consistently and systematically helps a business exceed its competitors in the same industry (Ajina, 2023). The author mentioned that customer loyalty is the foundation of any organization's success and its integration with the other dimensions. This is because customer retention is increasingly challenging due to changes in customers' psychology and behavior over time.

In digital contexts, customer loyalty is often conceptualized as e-loyalty, which refers to customers' intention to remain engaged with online platforms, promote them to others, and engage in repeat transactions (Rahmawaty et al., 2021). The authors conceptualize loyalty as a deeply held commitment that develops progressively through four stages: Cognitiveness ,

Affective, Conative and Action. Cognitiveness is a preference for a company's products and services. Affective, which is positive behavior that comes from desires and leads to referential behavior. Conative refers to a customer's intention to revisit a business website because of previous experiences. Lastly, action is the desire of customers to return to the internet in order to make purchases (Rahmawaty et al., 2021). These stages show that customer loyalty is about how customers feel and what they do. This makes customer loyalty important for a company to be successful in the long run and to be better than other companies.

Besides that, e-loyalty refers to a customer's dedication and confidence in a website. According to Christinto et al. (2023) customer behavior involving frequent visits, purchases, and referrals from the same website is referred to as loyalty in the context of electronic commerce. Customers who are loyal are more likely to return, whether or not they are making purchases online. E-wallet providers demonstrate their dedication to customers to build loyalty and promote frequent use of their products. Several factors related to e-trust, such as benevolence, competence, and integrity, can also impact e-loyalty (Christinto et al., 2023). Multiple elements can affect e-loyalty, including the quality of digital services, user experience, confidence in security and privacy, and alignment with customer expectations. Thus, E-loyalty contributes to customer retention and long-term profitability.

Customer loyalty is defined as a strong dedication to staying with a certain brand when faced with pressure to switch (Utama et al., 2022). Furthermore, e-loyalty is the desire of a customer to return to a certain website or make further purchases (Wati et al., 2024). This sustained engagement reflects a mutually beneficial relationship between digital service providers and their customers, characterized by repeated purchases, cross-buying behavior, positive word-of-mouth, and resistance to competing alternatives. This loyalty will boost profitability, promote customer referrals and also support long-term sales growth. There are four main components that make up e-loyalty, including making repurchases on a regular basis, buying different products, referring others to the websites and displaying resistance to competing offers. The psychological component of emotional attachment is also related to this loyalty. It indicates a stronger emotional connection between the brand and its customers.

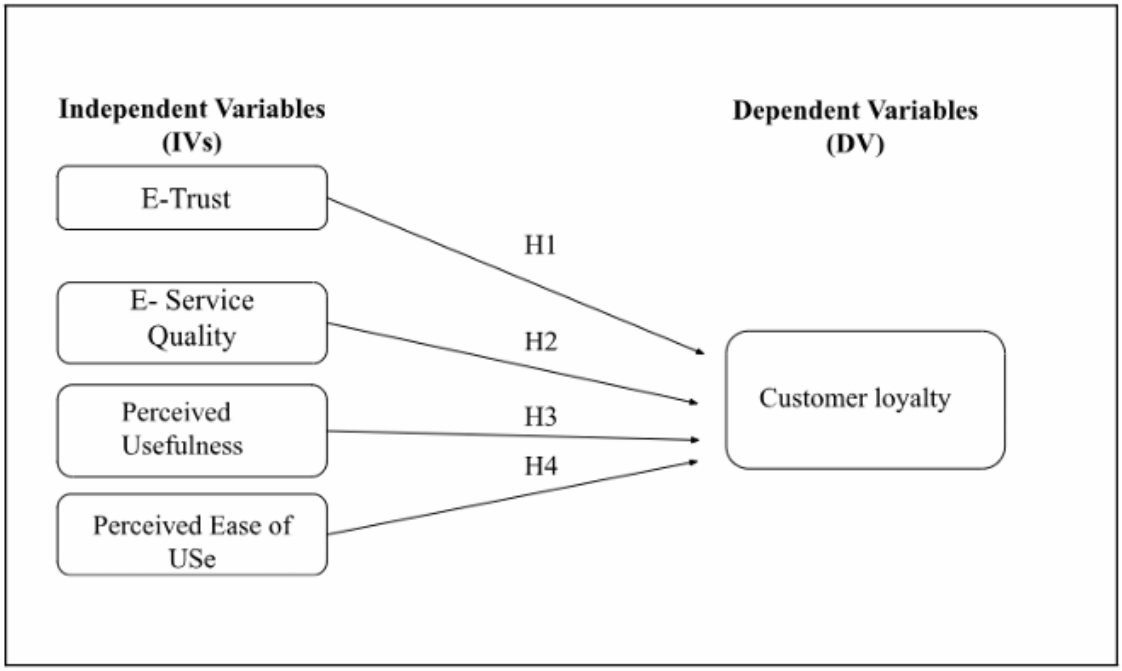


Figure 1: Research framework for E-Trust, E-Service Quality, Perceived Usefulness, Perceived Ease of Use and Customer Loyalty of Touch' N Go E-wallet payment method.

E-Trust

E-trust, or trust in digital transactions, is a key factor in building customer loyalty. Customers are more willing to stay with the products and services they use when the e-wallet payment method builds confidence. In the study conducted by Rifki et al. (2024), the significance of trust in online shopping is highlighted. Cahyanti & Dhewi (2022) found that the e-trust effect on e-loyalty indicated that customers have the confidence to use the application and trust to continue using e-wallet for repeat purchases. Users reported that ShopeePay as e-wallet payment methods can build trust and confidence until they are satisfied with their transactions. Furthermore, the research stated that ability shows how well a business can impact the market and generate confidence in their dependability and trust (Heryndra, 2021). Meanwhile, integrity builds customer loyalty through honesty, trust and kindness builds trust by responding to the needs of the customers (Rahmawaty et al., 2021). Customer loyalty is directly related to trust, particularly in the service sector where it is crucial to the relationship between supplier and customer. When consumers have trust in a service or brand, they are more likely to remain with it, making repeat purchases and building strong relationships with it.

A significant and positive correlation has been shown in numerous studies between e-trust and customer loyalty (Cahyanti & Dhewi, 2022; Heryndra, 2021; Rahmawaty et al., 2021; Rifki et al.,2024).

Thus, the first hypothesis was created by the researcher and is shown below:

H1: E-trust will positively and significantly influence customer loyalty on Touch' N Go E-wallet payment method.

E-Service Quality and Customer Loyalty

According to Cahyanti & Dhewi (2022), e-wallet payment systems' ease of use demonstrates how e-service quality affects e-loyalty. Customers will be loyal to the e-wallet payment methods when they find that it can satisfy their needs and the services meet their expectations. There are also user reviews indicating that e-wallets provide memorable and high-quality services that encourage user loyalty. Rifki et al. (2024), indicated that e-service quality is a company's ability to deliver the best customer experience that maintains the standard of efficiency and effectiveness.This indicates that an increase in e-service quality levels leads to heightened customer loyalty in e-wallet transactions. When the quality of service meets or exceeds expectations, levels of customer loyalty and retention are notably enhanced (Wati et al., 2024). E-service quality assesses how effectively services fulfill customer expectations, which is crucial for ensuring customer loyalty and satisfaction (Tee et al.,2025). The strong link between service quality and customer loyalty allows businesses to gain deeper insights into their customers' needs and optimize their positive experiences. Furthermore, service quality can demonstrate the extent to which a specific service enhances customer satisfaction and loyalty for the organization, such as how customers feel about relying on it as opposed to competitors (Ajina et al., 2023).

A significant and positive correlation has been shown in numerous studies between e-service quality and customer loyalty.

H2: E-service quality will positively and significantly influence customer loyalty on Touch' N Go E-wallet payment method.

Perceived Usefulness and Customer Loyalty

According to the research conducted by Lee et al. (2022), customers perceive the Touch' N Go e-wallet as user-friendly and effective due to its straightforward registration process and rapid verification. Furthermore, the study suggests that the 'DuitNow' feature enhances transaction accuracy, which further improves the overall experience for e-wallet users. The acceptance of digital systems such as Internet and mobile banking is significantly influenced by perceived usefulness, referring to the belief that technology improves job performance (Ahmad et al., 2023). When users believe that technology is effective and beneficial, they are more inclined to utilize it. The results from this research highlighted that perceived usefulness positively and significantly affects customer loyalty regarding e-wallet payment options. Customer loyalty is notably impacted by perceived usefulness, as individuals are more prone to stick with a technology that enhances their efficiency and provides valuable benefits. Users exhibit greater satisfaction and loyalty to a platform when they view it as helpful.

The findings from the articles demonstrated that customer loyalty toward e-wallet payment methods is positively and significantly influenced by perceived usefulness (Ahmad et al., 2023; Heryndra, 2021; Lee et al., 2022).

Therefore, the researcher formulated the third hypothesis, which is detailed below:

H3: Perceived usefulness will positively and significantly influence customer loyalty on Touch' N Go E-wallet payment method.

Perceived Ease of Use and Customer Loyalty

In the context of e-wallet services, perceived ease of use reflects intuitive interface design, transaction efficiency, and operational convenience. Lee et al. (2022) revealed that the perceived simplicity of Touch' N Go significantly influences customer loyalty. The platform's user-friendly nature encourages frequent usage (Alexander & Punadi,2025). Moreover, features such as bill payments, QR code transactions, and the DuitNow transfer option—add considerable value. Additionally, customer loyalty is directly influenced by the perceived simplicity of ordering applications in terms of efficiency, comfort, and flexibility (Saniyyah & Hariyana, 2024). A crucial factor influencing consumers' intentions to remain loyal to a brand is its ease of use. In the Technology Acceptance Model (TAM), perceived ease of use assesses how users perceive the ease of operation of a technology (Heryndra, 2021). Consequently, customer loyalty and frequency of use are positively affected when technology offers comfort and simplicity.

Collectively, prior research suggests that when customers perceive an e-wallet as simple and convenient, their satisfaction and continued usage intentions increase, thereby strengthening customer loyalty (Heryndra, 2021; Lee et al., 2022; Saniyyah & Hariyana, 2024).

Thus, the fourth hypothesis was created by the researcher and is shown below:

H4: Perceived ease of use will positively and significantly influence customer loyalty on Touch' N Go E-wallet payment method.

Methodology

The current research study follows a quantitative research design and thus, the systematic collection and analysis of numerical data are facilitated in order to achieve the objectives of the research study. Quantitative research is a systematic, structured study, which favours the systematic gathering of data in numerical form, and thus, allows correlation, patterns and trends to be examined on a well defined population (Amaratunga et al., 2002).

Primary data was collected through an online questionnaire. The sample group were Malaysian citizens aged over 21 who have been using Tough N Go (TNG) e-wallet for the past years. This survey included screening questions, demographic questions, questions on the independent variables (e-trust, e-service quality, perceived usefulness, perceived ease of use), and questions on the dependent variable (customer loyalty). The population consists of Malaysian people who have made purchases using TNG e-wallet before and are at least 21 years old (see Table 1). In total, 370 data were collected. Table 1 shows that most respondents were female (76.3%), aged 21–29 years (91.3%), and Chinese (93.0%). All respondents (100%) had previously used the Touch 'n Go eWallet application. In terms of monthly income, the majority of respondents earned below RM2,500 (68.3%), indicating a predominantly young, lower-income sample.

This survey used nonprobability sampling, specifically, convenience sampling is used. Convenience sampling entails which respondents are selected subjectively or by chance at the researcher's convenience to those who happen to be around. Researcher applied Structural Equation Modelling- Partial Least squares (SEM-PLS) to perform both measurement and structural analysis models. The study uses constructs for e-trust, e-service quality,

perceived usefulness, perceived ease of use and customer loyalty, each measured with multiple items on a 5-point Likert scale.

Table 1
Demographic profiles of respondents

Variable	Classification	Frequency	Percentage (%)
Gender	Male	71	23.7
	Female	299	76.3
Age	21-29 years old	274	91.3
	30-39 years old	15	5.0
	40-49 years old	6	2.0
	50 and Above years old	5	1.7
Ethnicity	Malay	9	3.0
	Chinese	279	93.0
	Indian	12	4.0
Have you used the Touch' N Go E-wallet application platform before?	Yes	370	100.0
	No	0	0
Average monthly income	Below RM2500	205	68.3
	RM2500-RM4500	70	23.3
	RM4501-RM6500	16	5.3
	RM6501-RM8500	4	1.3
	More than RM8501	5	1.6

Data Analysis and Findings

Measurement model analysis

When assessing the measurement model, it is essential to evaluate both convergent and discriminant validity, as outlined by Hair et al. (2017). According to their guidelines, acceptable thresholds include item loadings of at least 0.7. However, items with loading values between 0.4 and 0.69 may still be accepted, provided that the average variance extracted (AVE) for the construct is 0.5 or higher, and a composite reliability (CR) of no less than 0.7. The results of this study reveal that all items surpassed the 0.7 loading benchmark, while the AVE and CR values for all constructs exceeded the required 0.5 and 0.7 thresholds, respectively, thereby confirming convergent validity (refer to Table 2). Discriminant validity was rigorously evaluated using the Heterotrait–Monotrait (HTMT) ratio, following the criteria proposed by Henseler et al. (2015), which recommend that HTMT values remain below 0.85 (Kline, 1999). As shown in Table 3, all HTMT values were indeed below 0.85, providing strong support for discriminant validity. Overall, these assessments affirm the reliability and robustness of the measurement model.

Table 2
Assessment of construct reliability and convergent validity

Latent Variable	Item	Loading	AVE	Cronbach Alpha	CR
E-Trust	TR1	0.718	0.703	0.759	0.782
(Garepasha et al., 2020)	TR2	0.781			
	TR3	0.610			
E-Service Quality	SQ1	0.690	0.549	0.816	0.840
(Garepasha et al., 2020)	SQ2	0.654			
	SQ3	0.653			
	SQ4	0.522			
	SQ5	0.580			
	SQ6	0.693			
	SQ7	0.740			
	SQ8	0.548			
Perceived Usefulness	PU1	0.670	0.684	0.786	0.810
(Olivia & Marchyta,2022)	PU2	0.681			
	PU3	0.693			
	PU4	0.691			
Perceived Ease of Use	PEOU1	0.628	0.586	0.818	0.843
(Olivia & Marchyta,2022)	PEOU2	0.468			
	PEOU3	0.602			
	PEOU4	0.646			
Customer Loyalty	CL1	0.645	0.688	0.714	0.735
(Garepasha et al., 2020)	CL2	0.774			
	CL3	0.727			
	CL4	0.607			
	CL5	0.686			

Table 3
Assessment of discriminant validity using the HTMT criterion

	1	**2**	**3**	**4**	**5**
1.TR					
2.SQ	.542				
3.PU	.779	.467			
4.PEOU	.420	.508	.545		
5.CL	.825	.628	.835	0.781	

Note: E-Trust (TR), E-Service Quality (SQ), Perceived Usefulness (PU), Perceived Ease of Use (PEOU) and Customer Loyalty (CL)

Structural model analysis

A structural model analysis was employed to examine the relationships among the study variables. Hypotheses were evaluated using the bootstrapping method with 5,000 resamples, following the recommendation by Hair et al. (2017). The findings supported several proposed hypotheses. E-Trust (TR) exhibited an insignificant influence on the customer loyalty on Touch' N Go e-wallet payment method, with a path coefficient of $\beta = 0.064$ and a significance level of $p > 0.10$, thus rejecting H1. On the other hand, E-Service Quality (SQ) had a significant effect on customer loyalty on Touch' N Go e-wallet payment method ($\beta = 0.376$, $p < 0.01$), confirming H2. Perceived Usefulness (PU) also demonstrated a positive impact on customer

loyalty on Touch' N Go e-wallet payment method (β = 0.313, p < 0.01), supporting H3. However, perceived ease of use (PEOU) showed an insignificant influence on the customer loyalty on Touch' N Go e-wallet payment method (β = 0.071, p > 0.10), therefore, H4 is rejected. Overall, the proposed model accounted for 56.3% of the variance in user loyalty on Touch' N Go e-wallet payment method, indicating a moderate level of explanatory power (refer to Table 4).

Table 4
Assessment of structural model with bootstrapping procedure

Hypothesis and Path	Std. Beta	Std. Error	t-value	p-value	Decision	Effect Size
H1: TR → CL	0.064	0.102	1.504	0.134	Not Supported	No
H2: SQ → CL	0.376	0.090	6.721***	0.000	Supported	high
H3: PU → CL	0.313	0.090	6.233***	0.000	Supported	high
H4: PEOU → CL	0.071	0.135	1.277	0.203	Not Supported	No

Note: **Significant at p < .050 (one-tailed test); *** Significant at p < .001(one-tailed test).

Discussion and Implications

This study specifically targets Malaysian users, to investigate whether four factors will affect users' continuous usage of the Touch 'n Go e-wallet, that is, users' loyalty to this e-wallet. At the beginning of the study, the first hypothesis was proposed, the higher the E-Trust, the more willing users are to continue using this e-wallet. In the end, this hypothesis was not valid. This result differs from the conclusions of several previous studies, which are respectively the studies by Rifki et al. (2024), Cahyanti and Dhewi (2022), Heryndra (2021), and Rahmawaty et al. (2021). All these previous studies uniformly believed that users' trust in e-wallets will enhance their confidence and satisfaction in using them and ultimately make them willing to continue using them. In response to this result that differs from previous studies, the study provides a possible explanation that long-term users of Touch 'n Go who have used the e-wallet for a long time have long defaulted that this platform is safe and trustworthy. When the most basic trust is already rooted in users' perceptions, when they later consider whether to continue using this platform, users will no longer put trust as their top priority. Instead, they will attach more importance to more practical factors such as service quality, practicality, platform rewards, and additional functions.

The second hypothesis related to E-Service Quality proposed in the study was finally verified, and this conclusion is consistent with the research results of Cahyanti and Dhewi (2022) and Rifki et al. (2024). The study clearly mentions that if the service of an e-wallet is reliable, can respond in a timely manner when problems occur, and can satisfy users overall in the process of use, it will not only make users willing to stay on this platform instead of switching to other e-wallets, but also take the initiative to recommend this e-wallet to their relatives and friends around them. Based on this conclusion, this study proposes several specific optimization directions for Touch 'n Go. The priority is to fully optimize the system stability of the e-wallet, and resolve all the fundamental issues that most impair user experience and the customer service system can be upgraded, with both AI chatbots and human online customer service integrated to provide users with smoother consultation assistance. Through these precise small adjustments, service quality can be raised to a new level, user activity can be increased, and more people will be willing to actively open and frequently use this e-wallet.

The third hypothesis targeting the relationship between Perceived Usefulness and user loyalty was valid, and the research conclusion is consistent with the results of Lee et al. (2022), Ahmad et al. (2023), and Heryndra (2021). Put simply, what this hypothesis aims to confirm is one thing, the more users perceive this e-wallet as practical and capable of effectively solving their payment problems, the more they will continue to use the platform and not switch to other payment tools. The verification results we finally obtained are completely consistent with the conclusions previously reached by the scholars. If users find that Touch ’n Go is convenient to use in daily life, does not delay things, and can help them, they will be more willing to continue using this platform and will not easily switch to other products. To further strengthen users' perception that "this platform is very practical", Touch ’n Go can also add many practical functions, such as bill due reminders, expenditure analysis tools that help users sort out where their money is spent, bookkeeping and budget resources that help plan monthly expenses, and personalized financial homepages tailored for each user. In addition, increasing the platform's transaction speed to make the system operate more smoothly, and pushing rewards, discounts, and activities that match their needs based on each user's usual usage habits can also further enhance the platform's practical value and retain users to continue using it.

The fourth hypothesis, which proposed that "Perceived Ease of Use will positively promote user loyalty", was not verified. This result is contrary to the research conclusions of Lee et al. (2022), Heryndra (2021), and Saniyyah and Hariyana (2024). This hypothesis originally guessed that the easier users find the e-wallet to get started with and the simpler its operation, the more they will continue to use it. However, the research data of this study failed to support this conjecture and instead differed from the conclusions reached by the scholars. Although many of the current functions of Touch ’n Go, such as QR code payment, pre-deposit top-up, bill payment, and DuitNow transfer are simple to operate and easy to get started with, for long-term users who have used the e-wallet for a long time, ease of use is no longer an advantage that can differentiate the platform, but has become a basic requirement that such e-wallet platforms must meet. Once users are familiar with all the core interfaces of the platform, whether it is easy to operate will no longer affect their decision to continue using the platform. Instead, they will assign more weight to other more core factors such as whether the platform's service quality is good enough, whether it is practical to use, whether it is safe and reliable, and whether the various promotional benefits launched by the platform are attractive enough.

Conclusion and Recommendation for Future Research

This study aimed to clarify the conditions under which Malaysian users may be loyal to the Touch N Go E-Wallet payment system, and the four key determinants are E-Trust, E-Service Quality, Perceived Ease of Use, and Perceived Usefulness were identified and was verified by collecting 370 valid users questionnaires. Among the four independent variables used, only E-Service Quality and Perceived Usefulness can effectively drive users to continue using this e-wallet and remaining two factors which are E-Trust and Perceived Ease of Use have failed to show a statistically significant relationship with user loyalty.

To enable future researchers conducting similar studies to produce more robust results, this paper proposes three core directions for improvement. The first direction is to strive to secure

more research funding and resources. With sufficient funds and supporting resources, more advanced statistical analysis tools can be adopted, dedicated research assistants can be hired to share the daily workload, and small participation incentives can be offered to users who take time to participate in the study.

The second direction is that future studies should adopt more diverse sampling methods, instead of only recruiting a fixed group of users. Users with more diverse backgrounds must be included in the research scope by covering all users across different ethnicities, genders, ages, income levels, and locations in Malaysia, with a particular focus on including more Malay and Indian users, older users, and users residing in rural or semi-urban areas. Only by incorporating these previously under-covered groups can a complete and comprehensive profile of Malaysia's e-wallet user base be drawn, avoiding overly one-sided conclusions.

The third direction is that subsequent studies should extend the data collection period, instead of rushing to draw hasty conclusions. With sufficient time, questionnaire design can be refined to be more reasonable, previously uncovered groups can be supplemented and recruited, and follow-up interviews can be conducted with users who have already participated. The final dataset collected will be more robust and comprehensive than one produced under time constraints.

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Conflict of Interest
The authors declare that they have no conflicts of interest regarding this manuscript.

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