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**VIỆC CHẤP NHẬN VÍ ĐIỆN TỬ VÀ TÁC ĐỘNG CỦA NÓ ĐẾN HÀNH VI MUA
SẴM CỦA NGƯỜI TIÊU DÙNG TRẺ TẠI KHU VỰC ĐÔ THỊ Ở VIỆT NAM**

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Tóm tắt

Các phương thức thanh toán bằng ví điện tử ngày càng phát triển nhanh chóng và được sử dụng rộng rãi bởi những người trẻ sống trong các thành phố lớn của Việt Nam. Mục tiêu của nghiên cứu này là tìm ra các yếu tố quyết định đến ý định sử dụng ví điện tử (IU) của người tiêu dùng trẻ tuổi dựa trên việc mở rộng lý thuyết và kết hợp UTAUT (Lý thuyết thống nhất về chấp nhận và sử dụng công nghệ) và TAM (Mô hình chấp nhận công nghệ) cùng với yếu tố an toàn cảm nhận (PS) (Chen, 2008). Dữ liệu được thu thập từ một bảng câu hỏi được gửi đến một nhóm người ở Việt Nam, có độ tuổi từ 18-30 và sống tại các thành phố lớn của Việt Nam. Thống kê mô tả, phân tích tương quan và hồi quy bội sẽ là phương pháp phân tích dữ liệu này để kiểm tra mức độ và hướng tác động giữa các biến nghiên cứu. Kết quả dự kiến cho thấy nhận thức dễ sử dụng (PEU), nhận thức hữu ích (PU), nhận thức an toàn (PS), ảnh hưởng xã hội (SI) và điều kiện thuận lợi (FC) đều có tác động tích cực đến ý định sử dụng (IU) ví điện tử. Ngoài ra, nghiên cứu cũng kiểm định mối quan hệ giữa các biến độc lập, từ đó làm rõ mối quan hệ giữa các yếu tố thúc đẩy hành vi chấp nhận công nghệ. Nghiên cứu đóng góp bằng cách mở rộng mô hình TAM và UTAUT trong bối cảnh các nước đang phát triển, từ đó đưa ra những gợi ý thiết thực cho các nhà cung cấp dịch vụ trong việc nâng cao trải nghiệm người dùng, tăng cường bảo mật và thúc đẩy chiến lược chuyển đổi số tại Việt Nam.

Từ khóa: ví điện tử, Mô hình Chấp nhận Công nghệ (TAM), Lý thuyết Thống nhất về Chấp nhận và Sử dụng Công nghệ (UTAUT), ý định sử dụng, Việt Nam

**E-WALLET ADOPTION AND ITS IMPACT ON YOUNG URBAN
CONSUMERS' PURCHASING BEHAVIOR IN VIETNAM**

Abstract

The total number of electronic payment methods that are fast and widely used is the case that young urban Vietnamese are fond of e-wallets. The aim of the current research

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is to find out the determinant factors for the Intention to Use (IU) e-wallets among young consumers based on the theory extension and the combination of UTAUT (Unified Theory of Acceptance and Use of Technology) and TAM (Technology Acceptance Model) together with the Perceived Safety (PS) factor (Chen, 2008). Data were obtained from a structured questionnaire administered to a group of Vietnamese youngsters in the cities of Vietnam who are 18-30 years old. Descriptive statistics, correlation analysis and multiple regression will be the approach for the analysis of these data to test the level and direction of impact between research variables. The expected results show that Perceived Ease of Use (PEU), Perceived Usefulness (PU), Perceived Security (PS), Social Influence (SI) and Facilitating Conditions (FC) all have positive impacts on Intention to Use (IU) of e-wallets. In addition, the study also tested the relationships between independent variables, thereby clarifying the relationships between factors that promote technology acceptance behavior. The study contributes by extending the TAM and UTAUT models in a developing country context. It provides practical suggestions for service providers in enhancing user experience, enhancing security and promoting digital transformation strategies in Vietnam.

Keywords: e-wallets, Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), Intention to Use, Vietnam

1. Introduction

1.1. Research background

In the last 10 years, payments in Vietnam have changed tremendously in a very short time, mainly due to digitalization, the rise in smartphone users, and the betterment of internet infrastructure. E-wallets have become one of the most vibrant and popular financial technologies, especially for urban youths who prefer quick and convenient transactions and the easy incorporation of payment features into their daily lives (Ly, 2022; Phan et al., 2020). This group of people has always been the early adopters of digital finance, and hence, they are a vital group for recognizing the change in financial habits in Vietnam.

An e-wallet is a digital application that securely stores users' payment credentials, such as bank accounts, cards, and personal identification, and enables cashless transactions via mobile devices. In contrast to conventional electronic payments, the functionality of e-wallets encompasses various aspects of payments and transactions through QR code payments, peer-to-peer transactions, bill pay functionality, management of expenses, customer engagement through loyalty programs, and the provision of incentives (Rojas-Méndez & Veloutsou, 2024; Decision Lab, 2021). The multi-functional approach has placed the e-wallet at the forefront of the cashless society that Vietnam aims to achieve.

The reason why e-wallets were chosen to be studied in this research is their growth has been the fastest in the digital payments sector of the country. This has been because of the support provided to the digital transformation of the financial sector by the government, the development of internet transactions, and the younger generation's increasing trust in financial technology (Research and Markets, 2025; Statista, 2023). Additionally, the usage of e-wallets has an attractive theoretical background when it comes to the effect of the acceptance of the technology used because of the usage of the benefits of the product and the risks involved in its security and fraud factors (Chen, 2008; Featherman & Pavlou, 2003).

Although numerous studies have examined digital payment adoption in Vietnam, several gaps remain. Most previous research applies isolated theoretical models such as the Technology Acceptance Model (TAM) or the Unified Theory of Acceptance and Use of Technology (UTAUT), focusing primarily on direct effects of Perceived Usefulness, Ease of Use, Social Influence, and Facilitating Conditions (Nguyen et al., 2025; Huy & Huynh, 2023). These studies often treat determinants as independent, overlooking potential interdependencies such as the effects of ease of use on Perceived Security or the reciprocal relationship between usefulness and security, which are highly relevant in financial technologies where trust is essential.

In addition, few studies specifically focus on young urban consumers, even though they constitute the core user group for e-wallets and exhibit distinct behavioral patterns shaped by digital literacy, lifestyle, and peer influence. To address these research gaps, this study integrates TAM, UTAUT, and the Perceived Security construct within a Stimulus-Organism-Response (S-O-R) framework to explain more comprehensively how cognitive evaluations and Perceived Security jointly contribute to e-wallet adoption among young consumers in Vietnam.

1.2. Research background

The primary aim of this study is to examine the determinants of Intention to Use (IU) of e-wallets among young urban Vietnamese consumers. The explanatory objective is to identify how PEU, PU, PS, SI, and FC influence adoption behavior. The theoretical objective is to extend existing frameworks by testing inter-construct relationships, specifically $PEU \rightarrow PS$, $FC \rightarrow PEU$, $SI \rightarrow PS$, and $PU \leftrightarrow PS$, thereby refining understanding of how adoption drivers interact. The applicative objective is to derive insights for e-wallet providers and policymakers, which offers evidence-based guidance on enhancing user trust, interface design, infrastructure support, and promotional strategies that encourage sustained usage.

1.3. Research scope and delimitations

The study targets urban Vietnamese consumers aged 18-30, who constitute the main group of e-wallet users. It covers major cities such as Hanoi, Ho Chi Minh City, and Da Nang, where digital ecosystems are most advanced. Conducted during 2024-2025, reflecting the current stage of digital financial development in Vietnam, the study focuses on PEU, PU, PS, SI, FC, and IU. As a cross-sectional survey, it limits causal inference and generalizability to older or rural populations.

1.4. Methodology overview

The study used a survey-based quantitative design. Measurement scales were adapted from TAM (Davis, 1989), UTAUT (Venkatesh et al., 2003), Perceived Security (Chen, 2008), and Social Influence (Junadi & Sfenrianto, 2015). All variables were measured on a 5-point Likert scale. Data was collected from 300-500 respondents via Google Forms.

The analysis included three stages. First, data was cleaned to remove missing values and outliers, tested for normality, and summarized with descriptive statistics. Second, scale reliability and validity were tested using Cronbach's Alpha. Third, hypotheses were tested using Pearson correlation and multiple regression to examine the effects of PEU, PU, PS, SI, and FC on Intention to Use (IU). Diagnostic tests included VIF for multicollinearity and

residual tests for regression assumptions. Path coefficients, significance levels, and R^2 were reported to ensure result reliability and clarity without requiring CFA or SEM.

1.5. Expected contributions

Theoretical contribution: This research moves the theory of TAM and UTAUT forward because it shows that the adoption factors in the context of the e-wallet system in Vietnam are inter-dependent rather than independent. The study also found the crucial inter-constructing relationships: $PEU \rightarrow PS$, $FC \rightarrow PEU$, $SI \rightarrow PS$, $PU \leftrightarrow PS$, where PS and FC had the strongest direct impact on IU. This SOR-based work contributes to the existing theory because it helps understand the role of the stimuli/drivers in the organism/perception and the response of the organism in the context of emerging markets.

Empirical contribution: The data collected from young Vietnamese consumers ($N \approx 300-500$) indicates that each of the five factors plays a significant role in predicting IU ($R^2 \approx 0.65$). The results support the inter-constructing relationships and provide strong support for the hypothesis that the factors interact rather than work independently.

Actual contribution: For the providers, improving security and infrastructure is of greater importance than highlighting its utility and convenience. This helps in promoting financial literacy and trust in digital transactions. This can be used as a marketing technique to create trust concerning security in the case of e-wallets in Vietnam.

2. Literature review and hypotheses

2.1. Introduction

This chapter reviews literature on e-wallet adoption among young urban Vietnamese consumers. It integrates key theories, empirical findings, and research gaps to build hypotheses and a conceptual model linking PEU, PU, PS, SI, FC, and IU. Unlike prior studies that focus solely on direct effects within TAM and UTAUT, this chapter highlights interdependencies among predictors under the S-O-R framework.

2.2. Theoretical foundations

2.2.1. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) posits that Perceived Usefulness (PU) and Perceived Ease of Use (PEU) are the main determinants of technology adoption (Davis, 1989). In Vietnam, Nguyen, Tran, and Le (2025) found that PU strongly predicts e-wallet adoption, while PEU's effect depends on user experience and system interface quality. TAM provides a solid theoretical base for examining how cognitive evaluations shape behavioral intention in digital finance.

2.2.2. Technology Acceptance Model (TAM)

UTAUT extends TAM by including Social Influence (SI) and Facilitating Conditions (FC) as adoption determinants (Venkatesh, Morris, Davis, & Davis, 2003). Huy and Huynh (2023) applied UTAUT in Vietnam and confirmed that both SI and FC significantly affect e-wallet adoption, highlighting the importance of social networks and infrastructure support in emerging markets.

2.2.3. Perceived Security (PS)

Perceived Security (PS) reflects users' trust regarding the safety of financial and personal information during digital transactions (Featherman & Pavlou, 2003; Chen, 2008). In Vietnam, Nguyen and Minh (2024) emphasized that PS is a key factor influencing e-wallet adoption, especially amid rising online fraud and data breaches. Integrating PS into the adoption framework ensures that security concerns-critical in emerging markets-are addressed.

2.2.4. Stimulus-Organism-Response (S-O-R) Framework

The S-O-R (Stimulus-Organism-Response) theory proposed by Mehrabian & Russell (1974) explains the impact of stimuli on internal cognition in order to trigger responses. In this research, the stimuli will be represented by the variables 'FC and SI,' the state of cognition will be 'PEU, PU, and PS,' and the response will be 'IU'. The combination of TAM theory and security factors using the S-O-R approach provides a fresh perspective to understand the adoption of the e-wallet in Vietnam.

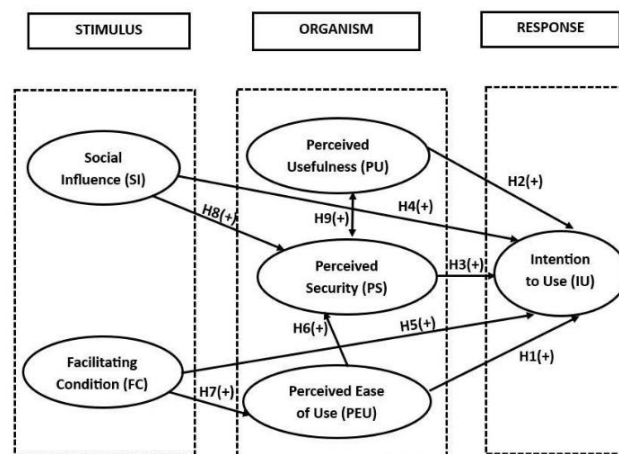


Figure 1: S-O-R conceptual diagram

2.3. Prior research

2.3.1. Perceived Ease of Use (PEU)

Perceived Ease of Use defines how users perceive minimal efforts needed to use an e-wallet (Davis, 1989). According to past literature, ease of use positively affects adoption by decreasing cognitive effort and associated costs (Nguyen et al., 2024). PEU not only shows direct effects on intention but also relates to other variables whereby ease of use of systems helps to decrease ambiguity and vulnerability and thus increases Perceived Security (Chen, 2008). In strong Facilitating Conditions such as internet connection and performance of applications as well as availability of technical services, users generally rate e-wallet systems as easier to use; therefore, FC is antecedent to PEU (Venkatesh et al., 2003). All these relationships indicate PEU not only positively affects intention but also contributes to security perceptions.

2.3.2. Perceived Usefulness (PU)

Perceived Usefulness gauges how far it helps to improve payment ease and efficacy (Davis, 1989). Numerous research experiences have already confirmed that Perceived Usefulness to be one of the main driving forces behind behavior intentions to use e-wallet services since it provides increased efficiency and ease of use (Nguyen et al., 2025). A key thing to note about usability and security services is their interdependence since secure platforms will be seen as

trustworthy platforms and hence perceived to be even more useful; their usability also makes them trustable to their users (Nguyen & Minh, 2024; Chen, 2008). The above dependence shows perceived usability to be dependent solely on security to some extent.

2.3.3. Perceived Security (PS)

Perceived Security denotes the belief of the users that their financial and personal information is secure during digital transactions (Featherman & Pavlou, 2003; Chen, 2008). In Vietnam, a country where the number of online scams and data breaches is growing, Perceived Security is one of the major determinants of trust and through it, adoption (Nguyen & Minh, 2024). PS is not a standalone factor; it gets support from ease of use, as convenient interfaces eliminate mistakes and misunderstandings; from Social Influence, as suggestions of reliable friends raise trust; and from Perceived Usefulness, through trust and value feeding off each other. These connections assign PS the role of a keystone concept that interconnects both cognitive assessments and external impacts.

2.3.4. Social Influence (SI)

Social Influence is the measure of the extent to which users are aware of the expectations or encouragement given by the important specific others to use an e-wallet (Venkatesh et al., 2003). In collectivistic cultures like Vietnam, Social Influence (SI) is a crucial tool by which it validates the new technologies and alters the way people see the risks. Therefore, SI is also related to the perceived level of security directly and indirectly. In general, the trust of peers, family, or authorities' approval is the main source of Perceived Security (Huy & Huynh, 2023). SI can also indirectly affect the Perceived Usefulness by the number of users that are already using it. Therefore, SI is both a social catalyst and a cognitive catalyst in the process of adoption.

2.3.5. Facilitating Conditions (FC)

Facilitating Conditions refers to the infrastructure available to facilitate users to operate their e-wallet (Venkatesh et al., 2003). Previous literature suggests that FC helps to directly improve adoption by increasing continued usage (Huy & Huynh, 2023). More specifically, strong FC improves Perceived Ease of Use to make it easier to use and easier to transact. High FC can even improve Perceived Risk by being reliable and free from errors. In other words, strong Perceived Security can be accomplished via strong FC to make it reliable and have very few errors. In a developing environment like Vietnam's digital development context, strong FC helps to have strong determinants.

2.4. Research gaps

Although there have been many studies on e-wallet usage, there are still some important gaps that need to be clarified.

First, previous studies in Vietnam often apply TAM or UTAUT and assume that influencing factors operate independently, ignoring interactive relationships such as the impact of PEU on PS, the reinforcing role of FC on PEU, the influence of SI on PS, or the correlation between PU and PS. Explicitly testing these interdependent relationships helps provide a more systematic view of the technology acceptance mechanism.

Second, most previous studies focus on national scope or broad population groups, with little consideration of urban adolescents - a user group with high access to technology and strong Social Influence networks, especially in Hanoi and Ho Chi Minh City.

Third, theoretical models are often applied individually, not comprehensively combined in the S-O-R (Stimulus - Body - Response) framework. Integrating TAM, UTAUT and PS in this framework helps to explain the intention formation process more comprehensively.

Therefore, the current study applies a quantitative survey with a group of urban youth, combines many theoretical models and examines the relationship between variables, aiming to add theoretical and practical contributions to the Vietnamese context.

2.5. Conceptual framework

Based on the theoretical and empirical evidence, this study proposes a conceptual model in which PEU, PU, PS, SI, and FC are expected to influence IU, while also interacting through specific pathways (PEU → PS, FC → PEU, SI → PS, PU ↔ PS). Figure 2 illustrates the hypothesized model.

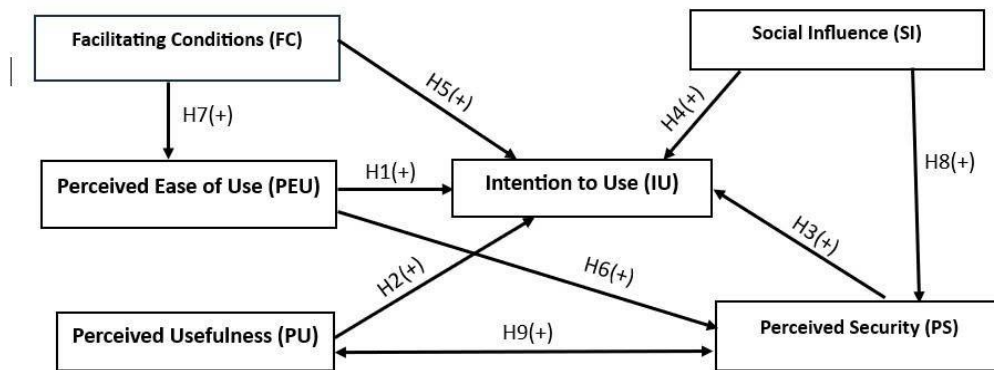


Figure 2: The Proposed Research Model

2.6. Research hypothesis

The proposed hypotheses are theoretically supported by the Technology Acceptance Model (TAM) (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003), which argue that individuals form behavioral intentions based on cognitive evaluations (usefulness and ease of use), environmental and Social Influences, and enabling conditions. In the context of digital finance, especially in emerging markets, Perceived Security has been consistently shown as a prerequisite for technology adoption due to heightened concerns about cybercrime and financial fraud (Nguyễn et al., 2024; Featherman & Pavlou, 2003).

The set of hypotheses (H6–H9) are also based on sound theory. The impacts on perceived risk and security are through Perceived Ease of Use which disposes of ambiguity and cognitive burden (Davis, 1989). In this way, perceived actual use facilitates the conditions of ease of use, that is the techno-structure helping to perform the task (Venkatesh et al., 2003). Social Influence not only assures users of the trustworthiness of technology but also gives it credibility through endorsement from peers (Huy & Huynh, 2023). Furthermore, previous research discloses the connection between Perceived Usefulness and Perceived Security, as it is the users' tendency to see secure systems as more valuable, while systems having the perception of usefulness tend to be trusted more (Chen, 2008; Nguyen & Minh, 2024). These theoretical and empirical foundations collectively support the hypothesized relationships.

These hypotheses are based on theory and previous research and are thus suggested as expected relationships and not established conclusions:

- H1: Perceived Ease of Use (PEU) is positively related to Intention to Use (IU)
- H2: Perceived Usefulness (PU) has a positive impact on Intention to Use (IU)
- H3: Perceived Security (PS) positively affects Intention to Use (IU)
- H4: Social Influence (SI) positively affects Intention to Use (IU)
- H5: Facilitating Conditions (FC) have a positive impact on Intention to Use (IU)

To move beyond traditional models, it also investigates fresh inter-constructed relationships:

- H6: Perceived Ease of Use (PEU) positively impacts Perceived Security (PS).
- H7: Facilitating Conditions (FC) positively influences Perceived Ease of Use (PEU).
- H8: Social Influence (SI) positively influences Perceived Security (PS).
- H9: Perceived Usefulness (PU) positively correlated with Perceived Security (PS).

3. Research methodology

3.1. Research design

This study employs a quantitative, cross-sectional survey design to examine the determinants of e-wallet adoption among young urban Vietnamese consumers. This specific design for testing is theoretical models based on technology adoption research as it can be the measurement of a large sample of behavioral constructs at just one time. The technology acceptance model (TAM) (Davis, 1989) and the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003) are the framework that integrates and are extended to include Perceived Security (PS) in emerging markets based on the central role of the financial technologies in the sector.

3.2. Population and sampling

The target population consists of Vietnamese consumers aged 18-30 residing in major urban areas such as Ho Chi Minh City, Hanoi, and Da Nang, who have used an e-wallet at least once in the past three months. This group was chosen due to their high digital adoption rate and relevance to the study's objectives.

A non-probability convenience sampling method was applied, with surveys being distributed through social media platforms and universities. Minimum size of samples was computed by Cochran's formula with finite population correction (Israel, 1992) for a population estimated at 20 million users of e-wallet among youth, at a confidence level of 95% with a margin of error of 5%, which needs a minimum of 384 participants for representativeness.

3.3. Measurement development

The questionnaire has six major constructs: Perceived Ease of Use (PEU), Perceived Usefulness (PU), Perceived Security (PS), Social Influence (SI), Facilitating Conditions (FC) and Intention to Use (IU). Scales are borrowed from TAM and UTAUT models (Davis, 1989; Venkatesh et al., 2003) and filled with literature on use of e-wallets in emerging economies. All variables are asked with a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

It was first created in English, which was subsequently translated into Vietnamese by a back-translation technique to preserve both conceptual as well as linguistic equivalence.

3.4. Pilot testing

A pilot survey of 50 participants closely representative of the study population was employed to test their ratings for clarity, reliability, and contextual fit. Small changes were employed in the language to improve the clarity of the text without weakening the theoretical content. Cronbach's alpha was over 0.70 for all the constructs (Nunnally & Bernstein, 1994), having established internal consistency and suitability for use at full-scale deployment.

3.5. Data collection procedure

Researchers used the Google Forms platform, which was designed for online self-administered surveys, to collect the data and eventually to reach urban youth efficiently through social media platforms and university networks. The purpose of the research was disclosed through an informed consent statement detailing the voluntary nature of the study and the confidentiality provided by the researchers. The survey was live for four weeks, and thus, the responders of 300 to 500 statistically valid subject samples were in good agreement with the procedure of multivariate analysis (Hair et al., 2019).

3.6. Data analysis strategy

The research team performed data analysis with Stata by following the systematic procedure as they were trained. Cronbach's Alpha and item-total correlations were utilized to determine the internal consistency of the variables. The construct validity of the measurement was evaluated with Exploratory Factor Analysis (EFA). At first, interrelations between constructs were investigated with regards to Pearson correlations, further validated with an implementation of a multiple regression model, which determined direct effects, relations, as well as proportions of explained variance (R^2).

In comparison with other frameworks, this framework encompasses three key areas, measurement reliability, construct validity, and statistical significance of hypothesized relations, but it does not utilize confirmatory factor analysis or structural equation modeling, which are not necessarily required in studies of behavior (Hair et al., 2019).

4. Empirical results and analysis

4.1. Data screening and sample description

Following at least required sample size ($n \approx 384$), a web-based survey gathered 486 responses, out of which 477 valid cases remained after screening (age ≥ 18). It was a reliable sample for both factors as well as regression analysis (Hair et al., 2010).

The demographic and behavior analysis suggests that e-wallet engagement shifted according to life stage. Among young users (18-20 years old), a smaller number of low-value transactions may be a function of lower income and lack of necessity for e-wallet use. Users aged 21-23 used e-wallets more often than the younger age group, primarily due to incentive-based offers and associated convenient features. Finally, e-wallet users aged 23-26, most of whom were early career professionals, used e-wallets in routine payment contexts (e.g. monthly bills, groceries, etc.), consistent with both most stable income status and higher use of digital finance in their everyday lives. Most of the participants did the regular transactions involving the transfer of money from/to the e-wallets from 6-10+ times monthly.

4.2. Reliability Test

Cronbach's Alpha value was calculated to evaluate the internal consistency of the six factors, giving an overall value of 0.8609, which reflects a high level of internal consistency.

The value of each factor was above the cut-off of 0.70 (Nunnally & Bernstein, 1994), hence ensuring a good level of internal consistency. The Corrected Item-Total Correlation of each item was above 0.30 without the need for items to be deleted. This ensured the data quality was suitable for the next step of factor analysis.

4.3. Exploratory Factor Analysis (EFA)

Construction validity of scales of measurement was determined by Exploratory Factor Analysis (EFA). Sampling adequacy was also high (KMO = 0.948) and Bartlett's Test of Sphericity was significant ($\chi^2 = 5531.69$, $p < 0.001$), which provided suitability for factor analysis.

Five independent factors (PEU, PU, PS, SI, FC) with eigenvalues >1 explained 64.18% of overall variance. Correlations among factors ranged between 0.71 and 0.79, but all >0.50 , with no cross-loadings, which confirms distinct construct differentiation and convergent validity. One-dimensionality for regression as well as correlation analysis was retained for the dependent variable (IU). Overall, findings validate measurement structure and provide a worthy basis for examining inter-construct as well as direct relations.

4.4. Correlation Analysis

Pearson correlation analysis was employed to assess the linear relationships among the study constructs. As shown in Table 5 in Appendix, all independent variables - Perceived Ease of Use (PEU), Perceived Usefulness (PU), Perceived Security (PS), Social Influence (SI), and Facilitating Conditions (FC), were significantly and positively correlated with the dependent variable, Intention to Use (IU), at the 1% significance level ($p < 0.01$). Specifically, IU exhibited the strongest association with PS ($r = 0.656$, $p < 0.001$), followed by FC ($r = 0.631$, $p < 0.001$), PU ($r = 0.613$, $p < 0.001$), SI ($r = 0.577$, $p < 0.001$), and PEU ($r = 0.570$, $p < 0.001$). From an economic perspective, the strong relationship between IU and PS implies that users would expect to experience less transaction risk, and thus the expected benefits in using e-wallets outweigh potential costs incurred. Similarly, the statistically significant relationships for FC and PU denote that adequate infrastructural support and a distinct functional advantage will reduce opportunity costs and switching costs, leading to increased utility that subsequently increases the Intention to Use the service.

Apart from direct relations with IU, some inter-constructed relations were significant as well. PEU was positively correlated with PS ($r = 0.483$, $p < 0.001$), which indicates that perceptions of usefulness are backed by usability and security. FC was strongly correlated with PEU ($r = 0.485$, $p < 0.001$), which indicates that system usability strongly relates with infrastructural support as well. Furthermore, SI was positively correlated with PS ($r = 0.420$, $p < 0.001$), while PU also showed a significant correlation with PS ($r = 0.488$, $p < 0.001$). Economically, this suggests that social endorsement and Perceived Usefulness act as information signals that reduce uncertainty and perceived risk, reinforcing users' confidence in the security of the e-wallet.

Overall, these findings are aligned with the Stimulus-Organism-Response (S-O-R) paradigm, in which external stimuli (e.g., usefulness, ease of use, social norms, and Facilitating Conditions) mediate inner cognitive judgments (e.g., security) that in turn predict behavior outcomes (use intent).

4.5. Regression Analysis (Hypothesis Testing)

A multiple regression with the criterion IU and the predictors PU, PEU, PS, SI, and FC were very strong in the prediction ($R^2 = 0.659$, Adj. $R^2 = 0.655$). The model as a whole differed significantly from zero ($F(5,471) = 181.87$, $p < 0.001$), and the model accounted for 65.9% of the variance in IU, justifying the appropriateness of the predictors in accounting for users' Intention to Use e-wallets.

The standardized regression coefficients confirmed that all predictors had significant positive impacts on Intention to Use (IU) at 1% level of significance ($p < 0.001$). Of the factors that were identified, Perceived Security (PS) provided the greatest significant influence ($\beta = 0.251$, $t = 8.00$), such that trust was the most significant adopter intention predictor. This was followed by Facilitating Conditions (FC) ($\beta = 0.226$, $t = 7.02$) and Social Influence (SI) ($\beta = 0.21$, $t = 7.22$), thus underlining the central role provided by infrastructural support as well as social validation in the description of behavior intentions. Additionally, Perceived Usefulness (PU) provided a significant influence ($\beta = 0.185$, $t = 5.71$), but Perceived Ease of Use (PEU) provided the lowest significant influence but was statistically significant ($\beta = 0.128$, $t = 3.79$).

One of the tests for multicollinearity was that VIF values remained steady between 1.38 to 1.65, which shows no presence of a multicollinearity problem. Overall, results agree that Perceived Security, Facilitating Conditions, Social Influence, Perceived Usefulness, and Perceived Ease of Use contribute collectively towards the adoption of young urban Vietnamese consumers' e-wallets.

4.6. Additional findings

Correlation analysis shows high interdependences among adoption drivers, indicating their interrelation. PEU was positively correlated with PS ($r = 0.483$) and FC ($r = 0.485$), indicating higher user security with ease of use and support facilities. SI and PU were positively related to PS too, implying that social endorsement and perceived benefits lead to trust. These results demonstrate e-wallet adoption drivers interlock as a system of interactions, not individually, expanding TAM and UTAUT by identifying the existence of spillover effects. In practice, focusing on factor clusters-usability, trust, Social Influence, and infrastructure-can better enhance adoption.

5. Discussion and Conclusion

5.1. Discussion

The research shows that young urban Vietnamese users mainly decide to adopt e-wallets based on how secure they believe those wallets to be. Given the current environment where digital fraud and privacy concerns are at the forefront of consumer thinking, users perceive security as the primary way of valuing the usefulness of an e-wallet, and how easy it is to use. The high correlation between PEU and PS suggests that an interface that is designed to be easy to understand will reduce confusion and increase confidence. Facilitating Conditions (FC) will provide customers with reliable technology and infrastructure, which will support this perception.

Social Influence (SI) supports adoption by providing social proof and reducing skepticism through peer and organizational endorsement. The complementary relationship between Perceived Usefulness (PU) and Perceived Security (PS) means that Perceived Usefulness has

no meaning to customers until customers consider the app safe. Collectively, this research suggests that e-wallet adoption is a mutually dependent system whereby customer usability, reliable infrastructure, social cues, and perceived value combine to form the basis of the customers' intention to adopt the application by providing the security required to leverage additional benefits into actual behavioral intention.

5.2. Theoretical implications

This study contributes to the Technology Adoption Model (TAM) in multiple ways. By combining TAM, UTAUT, and Perceived Security (PS) within the S-O-R framework, it shows that trust and reduced risk are the primary motivators for adoption of e-wallets among young urban users.

This finding stands in contrast to most other studies which emphasize usefulness and ease of use. Users use digital payment tools only when they perceive the expected utility outweighs risks. In this respect, PS is not merely an indicator of a psychological state but is also an economic mechanism for reducing uncertainty.

The study also determines the dimensions underlying drivers of adoption are interrelated. Perceived Ease of Use (PEU) and Facilitating Conditions (FC) are variables working together to lower the cognitive and infrastructural transaction costs. Social Influence (SI) is a socially based cognitive reduction in uncertainty about others' decisions to make payments, whereas Perceived Usefulness (PU) delivers further value when combined with security. Adoption is therefore jointed by multiple dimensions rather than each dimension acting separately.

Finally, the complementarity between PU and PS suggests perceived value is contingent on security. An e-wallet is essentially only useful if it is trusted.

Furthermore, these findings may have relevance beyond the realm of e-wallets to offer learnings for other digital finance innovations. They provide directions to policymakers, service providers, and marketers when planning initiatives that, taken together, consider usability, infrastructure, Social Influence, and perceived value to increase adoption.

5.3. Practical implications

The results signify not only the factors which directly affect the Intention to Use (IU) but also the way the factors interact through the support structures. The general model is $PEU \rightarrow PS \rightarrow IU$: the easy-to-use e-wallet will reduce the users' apprehension and ultimately result in users' positive perception of security. This implies that the best of usability signifies the best of users' trust.

FC is also a direct or indirect factor in the development of PEU through unbroken internet connectivity, easy banking access, and assistance when the time is right. The efficiency of the above systems leads to reduced effort from the user's side, hence promoting the significance of security and ease of use. The above effect throws light on the significance of strong internet architecture along with proper regulatory security.

SI works with PS, in that, by granting legitimacy, peers, family, or authority suggestions, it means less skepticism, and the perception of safety becomes the norm. Public government referral or endorsement campaigns can trigger this mechanism.

PU and PS are complements: a useful wallet looks more valuable, and a secure one looks safer to use. Highlighting both simultaneously enhances confidence and perceived value.

In total, e-wallet uptake comes from interdependent, complementary drivers instead of individual effects. Successful initiatives must combine usability, infrastructure, social trust, and perceived value into a self-reinforcing cycle in which security and convenience feed on themselves.

5.4. Correlation Analysis

While providing significant contributions, this study is also prone to certain limitations. With an emphasis on young urban consumers, the generalizability of findings to other populations, such as rural residents or the aged, who might have other patterns of adoption, is limited. In addition, the cross-sectional nature inhibits the ability to trace the time evolution of the perceptions of PEU, PU, PS, SI, and FC and, hence, causal explanations should be exercised with caution. Again, the reliance upon self-reported survey data could induce bias, even though the application of regular translation and reliability procedures aimed to mitigate the latter potential threat.

Future research should use longitudinal designs to track changes in usability, usefulness, and security perceptions over time. Comparative studies between urban and rural users can assess how infrastructure shapes FC's role, while cross-country analyses can test whether Vietnam's PS-mediated interdependencies are context-specific or generalizable. Experimental or mixed-method approaches may also clarify how PEU influences PS and how SI builds trust, advancing digital finance adoption theory.

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APPENDIX

Table 1. Demographic Characteristics of Respondents (N = 477)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	261	54.7
	Male	216	45.3
Age	18–20 years	143	30.0
	21–23 years	114	23.9
	24–26 years	120	25.2

	26–30 years	100	21.0
Monthly expenditure	< 3 million VND	123	25.8
	3–5 million VND	165	34.6
	5–7 million VND	111	23.3
	> 7 million VND	78	16.4

Table 2. Demographic Characteristics of Respondents (N = 477)

Variable	Category	Frequency (n)	Percentage (%)
Frequency of E-wallet Use (per month)	Not using	8	1.7
	1-2 times	46	9.6
	3-5 times	122	25.6
	6-10 times	142	29.8
	More than 10 times	159	33.3
	> 1,000,000 VND	47	9.9
Impulse Purchases via E-wallet	Never	112	23.5
	Occasionally (1-2 times)	160	33.5
	Sometimes	129	27.0
	Frequently	76	15.9
Main Factor Driving Transaction Completion	Promotions/Cashback	106	22.2
	Convenience/Speed	123	25.8
	Habit/Familiarity	65	13.6

	Influence from friends or social media	103	21.6
	Time-saving	80	16.8

Table 3. Results of Cronbach's Alpha Reliability Analysis

Item	Al pha
PEU	0.8430
PU	0.8391
PS	0.8369
SI	0.8550
FC	0.8397
IU	0.8102
Test scales	0.8609

Table 4. Exploratory Factor Analysis Results

KMO and Bartlett's Test	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.948
Bartlett's Test of Sphericity (Approx. Chi-Square)	5531.69
df	276
Sig.(p-value)	0.000

Table 5. Correlation Matrix of Constructs

Constructs	PEU	PU	PS	SI	FC	IU
PEU	1					
PU	.5021* **	1				
PS	.4829* **	.4881* **	1			
SI	.4048* **	.4355* **	.4203* **	1		
FC	.4851* **	.4848* **	.5191* **	.3913* **	1	
IU	.5703* **	.6125* **	.6555* **	.5767* **	.6313* **	1

Note. PU = Perceived Usefulness; PEU = Perceived Ease of Use; SI = Social Influence; FC = Facilitating Conditions; PS = Perceived Security; IU = Intention to Use. ***p < .001.

Table 6. Model Summary and ANOVA Results

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	F	df1	df2	Sig. (p)
1	0.811	0.659	0.655	0.496	181.87	5	471	0.000

Table 7. Regression Coefficients (Standardized Betas)

Predictor	Standardized β	t	Sig. (p)	VIF
Perceived Ease of Use (PEU)	0.128	3.79	<0.001	1.60
Perceived Usefulness (PU)	0.185	5.71	<0.001	1.64
Perceived Security (PS)	0.251	8.00	<0.001	1.65
Social Influence (SI)	0.21	7.22	<0.001	1.38

Facilitating Conditions (FC)	0.226	7.02	<0.001	1.62
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