Intention to Use e-Wallet for Mobile Payments: A Study Employing the Unified Theory of Acceptance and Use of Technology

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Abstract

Non-cash alternatives, like e-wallets, can now be used to make payments that were previously only possible with cash in this digital age. They are currently one of Pakistan's most widely used forms of payment. This research study uses the "Unified Theory of Adoption and Use of Technology", or UTAUT paradigm, to determine whether e-wallets are adopted in Pakistan and what factors affect their use. The aim of the study is to determine how an individual's behavioral intention is impacted by using an e-wallet. 210 respondents, dispersed across Pakistan, participated in the study, which used a quantitative methodology. IBM SPSS and PLS-SEM Smart-PLS (version-3) were utilized to assess the structural equation of data modelling and regression analysis. Effort Expectancy, Performance Expectancy, and Social Influence were found to have a significant and positive effect on behavioral intention. Perceived risk, perceived cost, perceived trust, and facilitating conditions, on the other hand, have been shown to have less influence on and be less accurate predictors of users' behavioral intention. According to this research, Pakistani e-wallet users prioritize convenience, functionality, and social impact over factors like risk, trust, and security, which is consistent with behavior seen in less developed countries.

Keywords: e-wallet, UTAUT, PLS-SEM, SPSS

Introduction

Alongside the rise in internet usage worldwide in recent years, mobile phone use has also expanded significantly. These mobile services are connected to other technologies, such as software, communication devices, and network infrastructure.

According to data from the 2023 electronic wallet Industry Outlook report which stated that 74% of the citizens residing in urban areas were polled during this contemporary era had utilized digital wallets (Kristianto et al., 2025). This study demonstrates trends in the payment behavior of internet customers. These days, businesses and consumers handle payments extremely differently, moving away from traditional in-person transactions and towards contact-less payment methods. According to the survey's findings, about eighty-four percent of participants stated that using e-wallets has emerged as the most popular method of payment. The number of those operating e-wallets rose sharply from sixty-one percent in year 2022 to seventy-two percent in year 2023 (Calderon, 2025). Features like storing electronic receipts, paying bills, using loyalty cards, redeeming coupons within the e-wallet application and conducting peer-to-peer transactions, have empower e-wallet users to manage their money without any hardship while using their smart phones (Luthara et al., 2025).

In order to achieve this, researchers that study technology adoption have employed a range of theories and models to analyze and forecast users' adoption of a technology. Technology Acceptance Model (TAM) has been utilized extensively to examine the adoption of many technologies (Chhonker et al., 2018). However, UTAUT has proven better in explaining the behavioral intention for use of technology than other theoretical frameworks in prior research, specifically, intention to use e-wallets (Zaidan et al., 2025). In order to determine usage intention, the UTAUT core variables i.e., Performance Expectancy, Effort Expectancy, Facilitating Conditions and Social Influence along with additional constructs such as Perceived Risk, Perceived Trust, and Perceived Cost are used in this study.

UTAUT variables with additional constructs is supposed to have an impact on technology adoption, as determined in prior research in many countries (Zaman et al., 2025; Valencia-Arias et al., 2025). The current study considers it vital to use UTAUT framework for investigating the phenomenon of e-wallet usage in Pakistan. However, the unique context of e-wallet use presents exclusive opportunities; necessitating a focused investigation. In order to inform future efforts to improve and use e-wallets, this study aims to provide empirical insights into the factors influencing e-wallet intention.

Theoretical Background

Adoption of Technology

The idea of technology adoption theory aids in the explanation of how an individual, group, or organization behaves or makes use of technology (Almahri & Saleh, 2024). Theories of technology adoption frequently describe how people obtain technology and the factors influencing their behavior (Alshammari & Alkhwaldi, 2025). Because technology and the internet are growing so widely, customers and service providers must understand both the advantages and disadvantages of these developments. Additionally, company models are affected by technological advancements, especially those of internet shops (Carbonara et al., 2024).

Unified Technology Acceptance and Use of Technology (UTAUT)

Venkatesh created the Unified Theory of Acceptance and Use of Technology (UTAUT), a complete model which can account for variety of perspectives on customer acceptance and inventiveness, analyzed, arranged, and integrated ideas from eight models and theories, such as the technological acceptance model (TAM), motivational model (MM), theory of planned behaviour (TPB), theory of reasoned action (TRA), model of PC utilization (MPCU), innovation diffusion theory (IDT), social cognitive theory (SCT), and a combined theory of planned behavior/technology acceptance model (C-TPB-TAM) (Neves et al., 2025). Assessing the influence of four main independent factors related to acronyms and abbreviations might help explain variations in intents. These factors are as follows; performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC), which directly influence the intention to use and behavior (Misraini & Muda, 2024).

E-Wallet

E-wallets, which allow mobile devices to access digital content wirelessly, are a component of mobile data services (MDS) (Fedorko et al., 2021). An electronic wallet (e-wallet) is a digital payment mechanism that uses server-based electronic media. In Pakistan, several e-wallets are used by Pakistani users such as JazzCash, EasyPaisa, NayaPay, SadaPay, UPaisa, Finja and many more (Shaikh and Sharif, 2024). E-wallets have become common in many developed countries since they may be considered as substitute for cash payments and facilitate fund transfers and purchases (Zaidan et al., 2025). In future, e-wallets will replace conventional wallets i.e., mobile phone accounts that can be used to transfer money (Bleumer, 2025).

Previous Research

Some previous studies have investigated the need to utilize e-wallets as a mobile payment mechanism using the UTAUT model (Saputri et al., 2025). Table I provides an overview of the factors affecting intention for this study. Previous research indicates that the association between behavioural intention and usage behaviour is moderated by perceived risk, and that the relationship between perceived risk and digital wallet usage behaviour is strongly moderated by perceived trust and service quality (Yousoof et al., 2024). It was discovered that behavioral intention significantly improved the way people used digital wallets (Denovan & Marsasi, 2025). According to study, social influence, perceived security, trust, and performance expectations all have a considerable favorable impact on M-payment acceptance during the COVID-19 period, with social distancing having the biggest impact (Nandru et al., 2025). However, it was found that effort expectancy has an unfavorable impact on M-payment acceptability (Anwar et al., 2024).

According to recent studies looking at how young people embrace mobile payments, behavioral intention is greatly positively impacted by social effect, and younger generations are drawn to adopt mobile payments by promotional activities and behavioral intention (Prasetyo et al., 2025). Additionally, a negative link between perceived threats was demonstrated. According to another study, performance expectancy is the primary predictor of mobile payment users' propensity to utilize the system in Pakistan (Hassaan & Yaseen, 2024). In decreasing order of significance, social influence, effort expectancy, perceived trust, and perceived cost follow (Valencia-Arias et al., 2025). However, it was discovered that perceived risk had no appreciable adverse effect on the behavioral intention to use M-payment systems (Chand & Kumar, 2024). Some research was

conducted in developing countries and developed countries. Sleiman et al., (2021) who investigated Chinese and American users' perceptions of mobile payments and found no evidence to support the idea that trust is impacted by perceived security or the context of mobile payments. However, as evidenced by security technology protection, security rules and policies, security responsibility commitment, and payment culture as demonstrated by coverage of mobile payment context and uncertainty avoidance, the results demonstrate that security measures significantly improve perceived security and trust (Almaiah et al., 2022). Customers' intentions to utilize mobile payments are influenced by contextual factors like price advantage, network externalities, trust, and habit, as well as barriers like risk, a lack of enabling conditions, and operational limitations, according to a previous study model (Thanigan et al., 2025). A research conducted in India with 298 survey results consented to accept and use mobile payment services in order to test the methodology (Pal et al., 2020).

To predict the lifespan of mobile payments and their potential to promote financial inclusion in the future, it is important to know the components that either support or undermine consumers' intention to continue using a service (Pal et al., 2020). They investigated the impact of perceived privacy (PP) and the mediating role of perceived certainty (PC) on behavioral intention (BI) for mobile payment systems among Jordanian ministries using the technology acceptance model (TAM) to identify the factors that might affect the adoption of mobile payment methods. The results of the empirical investigation demonstrate that in the BI of mobile payment systems, perceived utility (PU) and PC have a positive link (Almajali et al., 2022). The mediation analysis's findings indicated that PC acted as a partial mediator in the relationship between PP and the BI of mobile payment systems (Pal et al., 2020). Previous studies discovered that, among other things, the integrative, user-friendly, and usefulness gratification elements of the U&G theory had a substantial impact on attitudes on the adoption of mobile payment systems in Ghana (Donkor, 2019).

Additionally, the intention to keep using mobile payment services is significantly influenced by user attitude (Chen & Lai, 2023). The study also showed the influence of a variety of moderating factors. According to these results, Ghanaian consumers' use of mobile payment services may be improved by promoting participation in mobile payment technology and establishing advantageous circumstances (Alhassan et al., 2020). De Luna et al., (2019), identified the primary causes propelling the development of NFC (Near Field Communication), QR (Quick Response), and SMS (Short Message Service) mobile payment systems as a payment method by analyzing the parameters influencing customer acceptability of these systems. The research's unique findings can be seen in the way that different behaviors are formed depending on how customers use each of the recommended payment methods (Oliveira et al., 2016). Teng et al., (2022), discovered a number of significant findings, such as: (i) Despite problems that hinder user adoption (such usability), users are enticed to use e-wallets in order to earn reward points and receive cash back; (ii) effective strategies for e-wallet business models include marketing campaigns, a distinctive user interface, and customer support representatives on hand around-the-clock to help with issues; (iii) Strict government policies increase the competition between bank and third-party e-wallets; (iv) Short rates of merchant acceptance contribute to the absence of a critical mass of e-wallet usage.

The use of big data analytics to examine e-wallet usage provides more accurate and relevant information about the mobile payment system, demonstrating the complexity of the relationships between humans and technology (Teng & Khong, 2021). According to earlier studies, both developed and emerging nations are quickly adopting e-wallets to boost the volume and effectiveness of online transactions (Trianto et al., 2025). Following the 2019 corona-virus outbreak (COVID-19), government representatives have taken action to make non-contact payments easier (Sutharsini & Umakanth, 2021). The World Health Organization advises consumers to follow physical separation rules when conducting contactless transactions, such as payment transfers (Scott, 2025). Four parameters were chosen for the study: performance expectancy, perceived usefulness, perceived ease of use, and perceived security. Data was gathered via an online survey given to Pakistani, and the correlation approach was utilized to ascertain how the variables related to one another (Sair & Danish, 2018).

The findings indicate that Jordanians' inclination to use e-wallets in the case of a pandemic is significantly correlated with all four variables. However, they do have certain security issues (Jameel et al., 2024). Some more findings from Alam et al., (2021), found that although having a lot of room to grow, Malaysian e-wallets have not yet met expectations. The SWOT analysis found some strengths, like the incorporation of financial services, ease of use, safety, and protection, ease of connecting to other accounts, product and customer service management, and speed of implementation and administration; some weaknesses, like dearth of infrastructure and the "tapping" of devices already monopolized by the mobile phone market; and some serious risks, like malware attacks, frequent questions about clients' ability to use multiple wallets, and concerns about reckless spending by e-wallet users; and prospects, such the capacity to eradicate fraud, enhance customer support, and cultivate client loyalty (Moon et al., 2022).

Research Model & Hypotheses

Based on earlier studies on the UTAUT model, a number of variables have been examined and found to have significant and positive effects impacted by independent and dependent variables. A few hypotheses have been proposed about behavioral intention, and some key variables include perceived risk, performance expectancy, facilitating conditions, social influence, effort expectancy, perceived trust, and perceived cost. A number of hypotheses can be measured using the model that is cited, including:

H1: The behavioral desire to utilize an e-wallet is significantly impacted by perceived risk.

H2: The behavioral intention to utilize an electronic wallet is significantly impacted by perceived trust.

H3: The behavioral desire to utilize an e-wallet is significantly impacted by perceived cost.

H4: The behavioral intention to utilize an e-wallet is significantly impacted by facilitating conditions.

H5: The behavioral desire to utilize an e-wallet is significantly positively impacted by performance expectations.

H6: Expected effort has significant influence on the behavioral intention to utilize an electronic wallet.

H7: The behavioral intention to utilize an e-wallet is significantly impacted by social influence.

Table I. Factors Affecting Intention For Using e-Wallet In Various Countries

| Factors Affecting Intention of e-Wallet Use	Case Study (Country)	Source
Perceived Risk		
Perceived Trust	Pakistan	12
Service Quality		
Performance Expectancy		
Trust		
Social Influence	China	13
Perceived Security		
Social Influence	Taiwan	14
Perceived Trust		
Social Influence,		
Self-Efficacy		
Performance Expectancy	Oman	6
Perceived Cost		
Effort Expectancy		
Payment Culture		
Rules and Policy	China and U.S	15
Price Advantage		
Network Externalities	India	16
Trust		
Habit		
Perceived Privacy		
Perceived Certainty		
Perceived Usefulness	Jordan	17
User's Attitude		
Perceived Usefulness	Ghana	18
Behavioral Intention		
Perceived risk	Spain	19
Perceived Usefulness		
Perceived Benefit	Malaysia	20
Perceived security		
Perceived ease of use		
Perceived usefulness	Jordan	21
Ease of Use		
Protection and Safety	Malaysia	22
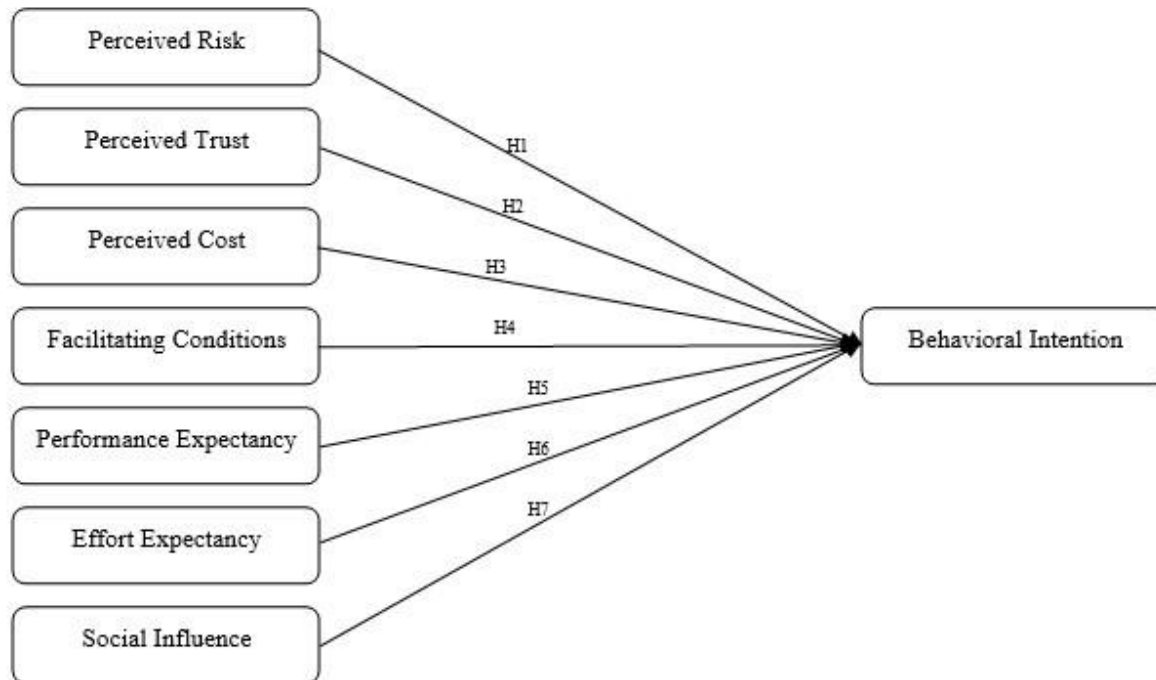
Fig.1 Proposed Research Model

Methodology

Instrument Development

The current study implements a quantitative methodology and makes use of structural equation modeling, or SEM. Before the questionnaire was widely distributed, a pilot study with 30 participants was conducted to evaluate its comprehensibility. Its validity and reliability were then assessed using IBM SPSS to perform validity and reliability tests. The questionnaire was distributed to a significant number of people from various cities, age categories, and educational backgrounds. The questionnaire was distributed by WhatsApp, and face-to-face contacts using Google Forms.

Participant and Procedures

Participants in the study who have used e-wallets to make payments must complete the questionnaire. A variety of electronic wallets, including Jazz Cash, Easy Paisa, Naya Pay, Sada Pay, Finja, U Paisa have been used by these participants. Respondents will indicate whether they make payments using their e-wallet daily, more frequently, or less frequently than three times a week. They will grade their responses on a Likert scale, where 1 represents strong disagreement and 5 represents strong agreement. To make sampling easier, a sample size of 210 respondents is selected from the population.

Data Analysis

PLS-SEM, or structural equation modeling, is a quantitative tool used in this work. Prior to that, the data was preprocessed using IBM SPSS version 22 to assess its validity and reliability and identify any outlier data that required cleaning. Following that, data processing is done using Microsoft Excel, while path analysis and hypothesis testing are done using Smart-PLS (version-3).

Results
Respondent Demographics
Information was collected from 285 respondents who were spread all over Pakistan between January and February of 2025. After eliminating missing values from some improperly completed surveys, we had 210 responders. SPSS was used to analyze the validity and reliability tests as well as to do an outlier analysis. Table II contains information from respondents. It demonstrates that the respondents are dispersed over the Pakistani major cities including Lahore, Faisalabad, Karachi, Gujranwala, Sialkot, Jhang, Peshawar, Multan, and others. Regarding the age range of the respondents, they are divided into five categories: under 18, 18 to 29, 30 to 39, 40 to 49, 50 to 59, and over 60.

Table II. *Respondent Demographic Information*

Var.	Respondent's Demographic Information Attributes	Number of Respondents
City	Lahore	47
	Faisalabad	50
	Karachi	30
	Gujranwala	25
	Sialkot	23
	Jhang	13
	Peshawar	10
	Multan	4
	Other	8
Age	Below 18	6
	18-29	44
	30-39	65
	40-49	71
	50-59	20
	Above 60	4
Gender	Male	120
	Female	90
Educational Level	Matriculation	45
	Intermediate	71
	Bachelor-Degree	68
	Master-Degree	24
	Doctor	2

Data reveals that Jazz Cash with 83 users, is the most popular e-wallet. Easy Paisa, with 49 users, U Paisa with 28 users, Sada Pay with 19 users, Naya Pay with 12 users, Pay pak wallet e-wallets with 11 users and, Finja with 8 users, is the next most popular e-wallets.

Measurement Model
The first step is to perform validity and reliability tests using SPSS to ensure that the measuring instruments used in the study are reliable and accurate. A normality test will be conducted to identify any outlier data following processing in PLS-SEM for model testing. The outcomes of the validity and reliability tests carried out with SPSS are shown in Tables II and III. The validity test is deemed valid if the significance value (sig 2-tailed) is less than

<0.05 and the computed r-value in Table II is greater than the tabulated r-value. A Cronbach's alpha value of >0.60 is considered acceptable in reliability testing.

The next step is the structural equation modelling (PLS-SEM) testing. Initially, the inner and outer models are examined. The convergent validity of the outer model, especially in outer loading, where a value greater than 0.7 is desired, demonstrates reliability testing. As shown in Table IV, items that are PR3, PC1, and have values less than 0.7 are subsequently removed. Composite dependability values are considered dependable if their AVE value is at least 0.5 and larger than 0.7, as shown in Table V. The construct's value with its measuring items is then compared to other variables in the Fornell-Lacker test, which is considered successful when it is performed. Next, the cross- loading factor test is run; a positive result means that the construct has a higher correlation with its measuring items than it does with other variables.

The VIF test is then conducted. If the VIF values are not between 5 and 10, then each variable and indicator does not test the same thing. The inner model test, also called model fit, is then used to determine the model's fit percentage, yielding a result of 76%. Table VIII summarizes the study's primary findings. The acceptance of hypotheses H5, H6, and H7 suggests a sizable positive impact. Performance Expectancy (H5), Effort Expectancy (H6), and Social Influence (H7) all showed positive and significance effects. Performance Expectancy was the first to show a positive and significant influence. The t-statistic values below 1.96 and P-values greater than 0.05 during hypothesis testing indicated that the other hypotheses, which included perceived risk, perceived trust, perceived cost, and facilitating conditions, had a positive but insignificant affect.

Table III. *Validity Testing Result*

Variables	Indicators	Pearson Correlations	Sig(2-tailed)
Perceived Risk	PR1	0.797	0.000
	PR2	0.851	0.000
	PR3	0.731	0.000
Perceived Trust	PT1	0.812	0.000
	PT2	0.774	0.000
	PT3	0.788	0.000
	PT4	0.790	0.000
Perceived Cost	PC1	0.786	0.000
	PC2	0.801	0.000
	PC3	0.655	0.000
	PC4	0.420	0.000
Facilitating Conditions	FC1	0.873	0.000
	FC2	0.887	0.000
	FC3	0.808	0.000
Performance Expectancy	PE1	0.912	0.000
	PE2	0.913	0.000
	PE3	0.891	0.000
Effort Expectancy	EE1	0.910	0.001
	EE2	0.932	0.000
	EE3	0.901	0.000
Social Influence	SI1	0.756	0.001

	SI2	0.860	0.000
	SI3	0.861	0.000
Behavioral-Intention	BI1	0.892	0.000
	BI2	0.923	0.000
	BI3	0.876	0.000

Table IV. Reliability Testing Results

Variables	Items	ronbach's Alpha	Cronbach's lpha (If Item Deleted)
Perceived Risk	PR1	0.701	0.574
	PR2		0.460
	PR3		0.771
Perceived Trust	PT1	0.805	0.732
	PT2		0.768
	PT3		0.747
	PT4		0.755
Perceived Cost	PC1	0.616	0.452
	PC2		0.424
	PC3		0.556
	PC4		0.671
Facilitating Conditions	FC1	0.817	0.708
	FC2		0.704
	FC3		0.824
Performance Expectancy	PE1	0.887	0.831
	PE2		0.821
	PE3		0.877
Effort Expectancy	EE1	0.903	0.861
	EE2		0.827
	EE3		0.886
Social Influence	SI1	0.772	0.797
	SI2		0.621
	SI3		0.631
Behavioral Intention	BI1	0.874	0.816
	BI2		0.766
	BI3		0.892

Table V. Outer Loadings

Variables	Indicators	Outer Loadings
PR	PR1	0.881
	PR2	0.916
	PR3	0.997
PT	PT1	0.826
	PT2	0.733
	PT3	0.801
	PT4	0.802
PC	PC3	0.748
	PC4	0.839

FC	FC1	0.858
	FC2	0.854
	FC3	0.853
PE	PE1	0.914
	PE2	0.917
	PE3	0.882
EE	EE1	0.914
	EE2	0.927
	EE3	0.897
SI	SI1	0.851
	SI2	0.816
	SI3	0.787
BI	BI1	0.914
	BI2	0.932
	BI3	0.842

*PR3, PC1, PC3 ITEMS WERE DELETED

Table VI. Reliability Results

Variables	Composite Reliability	Average Variance Extracted (AVE)
PR	0.895	0.811
PT	0.872	0.624
PC	0.793	0.655
FC	0.891	0.732
PE	0.933	0.822
EE	0.937	0.831
SI	0.856	0.673
BI	0.925	0.802

Table VII. Model Fit Test

Values	Saturated Model	Estimated Model
SRMR	0.062	0.064
d_ULS	1,234	1,233
d_G	0.505	0.508
Chi-Square	1,224,077	1,224,219
NFI	0.778	0.769

The study's findings corroborate those of the research, based on the findings from (Fedorko et al., 2021; Jameel et al., 2024; Yousoof et al., 2024), and (De Luna et al., 2019; Oliveira et al., 2016; Valencia-Arias et al., 2025), which states that performance expectations, social influence, transaction simplicity, and perceived rewards are frequently shown to be the elements influencing behavioral intention in developing nations. Conversely, results from studies conducted in industrialized nations, such those in (Kristianto et al., 2025; Valencia-Arias et al., 2025), show that citizens of developed countries have a greater awareness of system security and other aspects of system operation. This implies that behavioral intention is still significantly influenced by social and cultural influences.

Table VIII. Hypotheses Testing

Variables	T-Statistics (|O/STDEV|)	P-Values	Hypotheses Testing Status
EE->BI	3,403	0.002	Supported
PC->BI	0.089	0.923	Not Supported
PE->BI	8,680	0.000	Supported
PR->BI	1,618	0.105	Not Supported
PT->BI	0.977	0.332	Not Supported
FC->BI	0.838	0.404	Not Supported
SI->BI	3,214	0.000	Supported

Conclusions

This study found that among Pakistani users, behavioral-intention is strongly inclined by effort expectation, performance-expectancy, and social influence, but not by perceived risk, perceived cost, perceived trust, or facilitating conditions. Our findings support previous research showing that users' acceptability is largely influenced by social influence, performance expectations, and convenience of use in developing countries like Pakistan, while users in developed countries are more focused on risk, trust, and security.

Future Research

Future research may advantage from a closer look at the factors influence the non-significant impacts of perceived risk, perceived cost, perceived trust, and facilitating conditions on behavioral-intention towards e-wallet usage. It may be feasible to gain insight into the diverse attitudes and behaviors of e-wallet users by looking at potential contextual or demographic differences that may affect these correlations. Examining potential modifiers such as gender, age, income level, or technological proficiency, may also yield a more complete understanding of the complex implications on behavioral intention towards e-wallet usage. Furthermore, longitudinal studies could track shifts in behavioral intention over time, providing an additional dynamic understanding of e-wallet usage trends and any modifications to the factors influencing them. These kinds of studies could be highly beneficial in developing tactics that promote e-wallet use and raise user satisfaction and engagement.

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