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Factors Influencing Adoption of Digital Wallet in Nepal

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Abstract

Digital wallets have emerged as a crucial part of modern financial systems because they allow for quicker, more comfortable and widespread transactions in everyday life. However, security and privacy issues still remain as major challenges for their mass adoption, especially in emerging countries. In this context, the present study studies the factors affecting the adoption of digital wallets in Nepal, considering the behavioral and technological factors which affect the acceptance of digital wallet by the users. This study uses the Theory of Planned Behavior (TPB) and explanatory research design to analyze the influence of the independent variables selected on the behavior of adopting digital wallets. The data were acquired by using a non-probability sampling technique with the 320 respondents by using a structured questionnaire. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used in the empirical analysis to test the hypothesized relationships between constructs. The results show that Trust, Compatibility, Relative Advantage, and Perceived Behavioral Control have significant influence on digital wallet adoption in the Nepalese context while Perceived Risk does not show any statistically significant effect. The findings indicate the importance of trust-related and utility related factors in explaining adoption, and suggest that risk perception might not play as significant a role among those who have greater experience in the use of digital financial services. Overall, the study joins the growing body of literature on the adoption of fintech and brings context-specific evidence from Nepal, along with implications for policy makers, financial institutions, and fintech service providers seeking to boost adoption and promote financial inclusion in low- and middle-income countries.

Keywords: Adoption of digital wallet, trust, compatibility, relative advantage, perceived behavioral control, PLS-SEM, Nepal, fintech, and technology adoption, financial inclusion.

1. Introduction

The global financial services industry has been revolutionized by the rapid growth of mobile Internet technologies, spawning digital wallets as a disruptive payment innovation. The mobile applications used for storing payment credentials and performing electronic transactions, known as digital wallets, have proven to be more time-efficient, convenient, cost-effective, and traceable than cash payment systems (Liébana-Cabanillas et al., 2020; Kumar et al., 2021). The digital payments market has been gaining momentum in Nepal. The transaction value of mobile payment channels has experienced a significant increase from NPR 712 billion in 2019 to NPR 1,559 billion in 2022 (Nepal Rastra Bank, 2022). According to market projections, the market will reach USD 6.1 billion by 2028, averaging 13.95% growth per year (Statista, 2024).

A number of urban centers have seen the introduction of digital wallets like eSewa and Khalti. Even though these gains have been achieved, only around 26% of the Nepalese population has registered for these services (Nepal Rastra Bank, 2022). This is an indication that there is a need to systematically research and understand the determinants of adoption of digital wallets not only as an academic study, but also as a necessity in today's digitized economy. Psychological, technological and environmental factors have a significant impact on the willingness to use digital wallets. Psychological factors are factors that influence a user's feelings of trust, perceived risk, and user attitude; technological factors are factors that influence how easily a user can use it, how reliable it is, and how secure it is; environmental factors are related to Internet accessibility, financial literacy, regulatory structure, and cultural acceptance. Although some frameworks like Technology Acceptance Model (TAM) (Davis, 1989), Diffusion of Innovation theory (DOI) (Rogers, 1995) and Theory of Planned Behavior (TPB) (Ajzen, 1991) have been applied to the global understanding of technology adoption behavior, a few studies have operationalized these models in Nepal.

Critically, previous empirical studies of digital wallet adoption have largely taken place in the developed economies or other Asian countries, like India, Bangladesh or Vietnam, where the socioeconomic conditions, technology infrastructure and trust mechanisms are largely different from that of Nepal (Alalwan et al., 2017; Baptista & Oliveira, 2015). For this reason, the current body of literature is not comprehensive enough to provide much insight into the adoption of digital wallets in Nepal, especially from an integrated adoption perspective. Given this research gap, the present research is designed to integrate DOI and TPB in a single analytical model. In particular, it looks at the five factors that influence liking of digital wallets: Perceived Behavioral Control (PBC), Compatibility (CO), Relative Advantage (RA), Trust (TU) and Perceived Risk (PR).

2. Literature Review

Digital wallets are electronic payment applications which hold customers' money and enable various kinds of financial transactions, such as payments to merchants using a QR code, the ability to pay bills and make peer-to-peer payments via an internet platform. Digital wallets have garnered considerable academic interest, especially related to examining the technology behavioral characteristics when users adopt innovations like digital wallets (Kumar et al., 2021; Liébana-Cabanillas et al., 2020). For the

purpose of digital wallet adoption explanation, in this research, two well-known theories were used, namely the Diffusion of Innovation (DOI) theory and the Theory of Planned Behavior (TPB). According to the Diffusion of Innovation (DoI) theory by Everett Rogers (1995), the five perceived attributes of innovation, relative advantage, compatibility, complexity, trialability and observability, are major determinants of the rate of innovation adoption. Of these factors, relative advantage, compatibility, and complexity have been found to be the most critical factors that affect technology adoption (Chen et al., 2002). Relative advantage is the degree to which the innovation is perceived as being better than other alternatives that are currently available, in terms of convenience, efficiency and economic value. This construct is similar to Perceived usefulness in the Technology Acceptance Model (TAM) created by Fred Davis (1989). Using a Digital wallet, the users are more likely to make use of the technology when they think that it is quicker, more convenient, and more efficient than conventional cash transactions. Compatibility in contrast, concerns how well the innovation fits with the values, experience, lifestyle and finances of the users.

Previous research has shown that compatibility is a key factor affecting the adoption of fintech, especially in emerging markets where their technological preparedness and cultural tastes affect consumer's choices (Kaur et al., 2020; Nguyen & Tran, 2022). In addition to DOI, another psychological theory is the Theory of Planned Behavior which was developed by Icek Ajzen (1991) and focuses on the psychological and behavioral factors of the individual in predicting intentions to adopt technology. The Perceived Behavioral Control (PBC) is one of the key constructs of TPB that was included in this study, which is the perceived ability, confidence, and resources needed to successfully use digital wallet services. Based on the existing empirical evidence, PBC is found to be significant predictors of users' intention to use mobile payment technologies (Oliveira et al., 2016; Rahi & Abd. Ghani, 2019).

Digital literacy and technological accessibility can be significantly different between population groups in developing countries like Nepal and users' confidence in using digital platforms is consequently significant. Another key factor that comes into play is trust, particularly in regard to the adoption of digital wallets for financial transactions or when handling sensitive personal data. There are multiple definitions of the concept of trust, but one of the most commonly used ones is that trust is defined as the confidence, trustworthiness, and ability of the digital wallet provider to protect the user's interests (Mayer et al., 1995). Trust has been a consistent theme in previous studies that has highlighted the importance of reducing uncertainty and enhancing acceptance of EFS (Gefen et al., 2003). Likewise, research on the adoption of internet banking has also revealed that trust is regarded as one of the most powerful factors behind adoption of internet banking by the user (Suh & Han, 2002). On the other hand, perceived risk is also a great barrier to the adoption. Perceived risk refers to financial loss, privacy issues, security problems and technological failures that are expected to occur during the use of digital wallet (Lee & Chung, 2009).

Featherman and Pavlou (2003) found that the higher the perceived risk, the less inclined the user is to use an innovative financial technology. The combination of DOI and TPB offers a comprehensive theoretical perspective for understanding the adoption of digital wallets in developing economies like Nepal. The focus of DOI is on the traits of innovation, and TPB has a focus on the psychological and

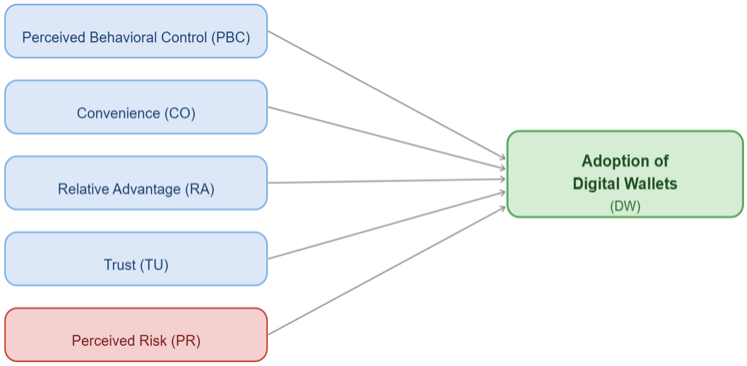
behavioral components of decision-making. In reality, the factors mentioned above (outside technological attributes) influence and are influenced by internal behavioural attributes in determining adoption of digital wallets. For example, despite the users' high-level perception of the benefits of digital wallets and their lifestyles, they may not be willing to use them because of low perceived behavioral control, which may be caused by low digital literacy or poor technological skills. As digital payment systems are still new and the procedures continue to be unclear, it is likely that users who tried to use digital payment systems for the first time will be deterred by the lack of familiarity with the new systems and how to use them.

Potential users may also be discouraged by the novelty of digital payment systems and uncertainty about the procedures for transactions, account registration, and problem-solving. Digital wallet adoption is also impacted by infrastructural issues that are common in developing economies.

Diffusion of digital wallet services may be slowed by unstable internet connectivity, poor smartphone penetration, and lack of merchant acceptance of digital payments, which could limit the number of times a service is observed and trialed, as suggested by the DOI theory (Rogers, 1995). Further, social and institutional influences also influence users' behavioral intentions. In collectivist societies, decisions on finances may be subject to the influence of the family members, peers, and social networks. Positive word of mouth communication and peer recommendations can help build trust and help alleviate uncertainty, facilitating adoption. In contrast, adverse experiences, and security-related concerns within social circles can deter possible users from participating in the digital wallet platforms. Institutional trust is also a key determinant to boosting users' confidence in digital financial services. People are more likely to use digital wallets if they believe that the service providers and the regulatory bodies are trustworthy and reliable (Mayer et al., 1995; Gefen et al., 2003), which is typical in developing economies where fraud and cybercrime are prevalent and there is a lack of generally accepted regulatory enforcement. Moreover, public policy initiatives like the government's push for cashless payments, benefits for using digital wallets and regulation frameworks that make them more helpful and appealing can boost users' willingness to use digital wallet services. Hence, it is important to have a multi-dimensional view that can account for technological, behavioral, social and institutional factors in the context of one framework to understand the adoption of digital wallets in Nepal.

The conceptual framework explains the theoretical foundation of this study. The independent variables are: Perceived Behavioral Control (PBC), Convenience (CO), Relative Advantage (RA), Trust (TU), and Perceived Risk (PR). Each of these variables is expected to impact the dependent variable, which is Adoption of Digital Wallets (DW). The age and gender variables will be the moderating factors, which appear above the path arrows to suggest that the relationship between the independent variables and the dependent variable may vary according to these factors. The concept framework combines three different theories, namely the Technology Acceptance Model (TAM), Diffusion of Innovations (DOI) Theory, and the Theory of Planned Behavior (TPB).

Figure 1: *Conceptual Framework*



Empirical Review

There is a vast amount of empirical literature concerning digital wallet adoption, which highlights various elements that affect user behavior when using digital wallets. The findings of sixteen recent studies conducted in Nepal, India, China, South Korea, Bangladesh, Jordan, Vietnam, Portugal and Africa have some uniformity with regard to the factors affecting digital wallet adoption. Specifically, Parajuli et al. (2024) reveal that effort and performance expectancy are the two key factors that significantly influence the intention to use fintech technology, while trust may be viewed as a mediating factor in Nepal. Meanwhile, Shrestha and Koirala (2024) identified two key factors related to use of digital wallets in Kathmandu Valley region: fast transaction speed and effective customer service. According to Gurung and Thapa (2024), digital literacy and substandard network infrastructure are significant obstacles to the use of new technologies.

Trust and quality of the system are also highlighted as important factors in international studies as well. For instance, Zhou (2013), Mensah et al. (2024) and Chen et al. (2023) found that user trust is positively related to systems reliability and security, while perception of risk is negatively related to adoption. However, the negative consequences can be mitigated by the development of greater trust by the end users with the service providers in the end (Featherman & Pavlou, 2003). Furthermore, the literature on emerging markets highlights that, in some cases, adoption processes are linked to other social and cultural environments, compared to developed markets. The significance of contextual factors and demographics in Nepal has been highlighted in several studies. Adhikari et al. (2024), for example, point out that Generation Z are driven by the usefulness of the technology and transaction speed. However, Sharma et al. (2022) found that network reliability played a significantly greater role in user satisfaction in Nepal than in India, highlighting the importance of taking into account the infrastructural issues of Nepal. But currently, literature on the use of digital technologies in Nepal is not consolidated as very few research works focus on the integration of multiple theories. Given this, the present study finds that there is a significant gap in literature related to the combined influence of two theories (Diffusion of Innovation (DOI) and Theory of Planned Behavior (TPB)) on the adoption of ICT in the context of Nepal. A deeper understanding of an individual's behaviour in this regard will be gained from an empirical analysis, which will include consideration of technology (including

however the different kinds of technology available to and used by the individual), psychology, and context. This multidisciplinary approach is highly important for the development of effective policies for the promotion of digital wallets in Nepal.

3. Research Methods

Research Design and Sampling Technique

The study employed a quantitative survey design of the cross-sectional survey type, as it is suitable for the study of theoretically derived relationships between the variables in the study of technology adoption (Hair et al., 2019; Creswell, 2014). Explanatory research design is used to find the impact of independent variable to dependent variable. The study uses the non- probability sampling with purposive sampling method and for data collection the Cochran formula was used. According to the formula $n_o = (Z^2 \times p \times q) / e^2$ where Z = 1.96 (95% confidence level); p = q = 0.5 (maximum variance assumption if there are no estimates for the population); and e = 0.06 (6% margin of error). This gives an approximate value of $n_o = 266.78$. Based on the expectation of non-response of 5% a target sample size of 280 respondents was established. However, the study collects the 320 data from the digital wallet users.

Research Instrument, Data Collection and Data Analysis

The structured questionnaire served as the tool for data gathering for the research, while the close-ended questionnaire was the method utilized in data collection. In addition, the 5-point Likert scale method (from Strongly Disagree to Strongly Agree) was utilized. Data were inputted using the Google Forms program, and once data input was accomplished, pilot testing was undertaken. The actual data gathering took place in January 2026.

The analytical technique used in the study was Partial Least Squares Structural Equation Modeling (PLS-SEM) software with SmartPLS 4.0 version. PLS-SEM is seen as especially appropriate for predicting research models comprising reflective measurement constructs and data with distribution that are skewed and/or non-normal (Hair et al., 2019). The analytical process was two-fold. The first stage involved evaluating the measurement model to determine construct reliability and validity, such as internal consistency, convergent and discriminant validity. In the second stage, the structural model was explored to assess the importance and magnitude of the hypothesized relationships between the constructs. A bootstrapping procedure with 5,000 resamples was used to obtain t value estimates and p value estimates in order to assess the statistical significance of the path coefficients. Moreover, multicollinearity diagnostics was tested using the Variance Inflation Factor (VIF).

Measurement Instrument

Each study construct was measured on the basis of multi-item scales from previously validated instruments and was represented as reflective constructs. The perceived Behavioral Control was assessed by four items borrowed from the research of Icek Ajzen (1991) and Rahi and Abd. Ghani (2019). The number of items used to measure the compatibility and Relative Advantage were five and

four, respectively, according to the Everett Rogers's (2003) and Chen's et al. (2002) conceptualization. The trust was operationalized using five items adapted from Gefen et al., (2003) and Mayer et al., (1995) and the Perceived Risk was operationalized using four items adapted from Featherman and Pavlou, (2003). The dependent variable (Digital Wallet Adoption) was operationalized through four items that covered behavioral usage, preference, intention to use in the future and recommending the Digital Wallet. The items of measurement were all rated on a Likert scale of 1 (Strongly Disagree) to 5 (Strongly Agree).

4. Result of the Study

Descriptive Statistics

Table 1 contains the descriptive statistics for all constructs. The construct Relative Advantage received the highest mean value (M = 4.024, SD = 0.660) showing high perceived advantage over traditional payment forms. Also, above the mid-point value, Digital Wallet Adoption (M = 3.891, SD = 0.643) and Compatibility (M = 3.857, SD = 0.754) obtained indicating positive adoption attitudes. High values were noted for Trust (M = 3.732, SD = 0.831) and Perceived Behavioral Control (M = 3.779, SD = 0.729). Low values (below the mid-point) were observed for Perceived Risk (M = 2.841, SD = 0.852).

Table 1: *Descriptive Statistics of Constructs (N = 320)*

Construct	Items	Mean	SD	Min	Max
Perceived Behavioral Control (PBC)	4	3.779	0.729	2	5
Compatibility (CO)	5	3.857	0.754	2	5
Relative Advantage (RA)	4	4.024	0.660	2	5
Trust (TU)	5	3.732	0.831	1	5
Perceived Risk (PR)	4	2.841	0.852	1	5
Digital Wallet Adoption (DW)	4	3.891	0.643	2	5

Note. SD = Standard Deviation.

Socio-Demographic Analysis

The study population was 320 respondents from a socio-demographic profile. The gender distribution was relatively balanced with 174 Male respondents (54.4%) and 146 Female respondents (45.6%). As far as age distribution is concerned, most of the respondents were in the 26-35 age bracket (59.4%) followed by 15-25 age bracket (19.4%). The result indicates that the use of digital wallets is largely skewed towards the younger and economically active, which aligns with the previous research on digital payment adoption (Sinha et al., 2019). As far as educational qualification is concerned, the respondents with SEE/SLC level and the respondents with higher secondary (+2) level qualification

are in similar proportion (20.6%) followed by the respondents having bachelor's degree (48.4%) and the respondents with master's degree (19.1%). The results suggest that those with higher levels of education are more likely to use digital financial services, which may be attributed to individuals' technological awareness, access, and financial literacy. In terms of occupation, students formed the largest group (68.8%) reflecting the relative younger age group of the sample. Regarding monthly income, the majority of the respondents had income ranging between NPR 20,001 and NPR 30,000 (36.9%) and 19.7% had income less than NPR 20,000 per month. Geographically, a significant share of respondents lived in the Kathmandu Valley (85.9%) which is relatively well endowed with digital and financial services in the region (Nepal Rastra Bank, 2023). Further, the total respondents in the sample were confirmed users of digital wallets, reflecting that the respondents were entirely exposed to digital payments services. Over half of the respondents (51.9%) said that they were using digital wallets on a daily basis and 29.4% said they were using them weekly. These results reflect the relative degree of engagement, and frequent use of digital wallet in Nepal's urban digital payment ecosystem.

Challenges Faced by Users while Using Fintech Services

The research examined the challenges that users faced in accessing digital wallet services. According to Table 2, the top three challenges faced was the difficulty in solving operational or transactional issues (62.5%), Lack of attractive incentives or rewards (24.7%), Slow transaction speed (21.9%) (See Table 2).

Table 2: *Challenges Faced by Respondents while Using Digital Wallets (N = 320)*

S.N.	Challenge	Frequency	Percentage
1	Difficulty in resolving operational or transaction issues	200	62.5
2	Lack of attractive incentives or rewards	79	24.7
3	Slow transaction speed	70	21.9
4	Poor internet connectivity	66	20.6
5	Limited merchants accepting digital wallet payments	40	12.5
6	System downtime or server issues	41	12.8
7	Security concerns while making payments	30	9.4
8	Complicated application interface	25	7.8

Note. Multiple responses permitted; percentages may exceed 100%.

Managerial Solutions to Challenges in Fintech Services

Respondents were also asked what could be done to enhance the adoption of digital wallets. As indicated in Table 3, the top suggestion was the provision of fast support when there were operational or transaction-related issues (n = 200, 62.5%). This mirrors the top challenge faced as indicated above. Other top suggestions were speeding up transactions (n = 83, 25.9%) and increase such as cashback rewards (n = 80, 25.0%) (See Table 3).

Table 3: *Respondents' Suggested Solutions to Minimize Challenges (N = 320)*

S.N.	Suggested Solution	Frequency	Percentage
1	Provide quick support to solve operational or transaction issues	200	62.5
2	Provide more incentives such as cashback and rewards	80	25.0
3	Improve transaction speed	83	25.9
4	Improve internet connectivity for smoother transactions	63	19.7
5	Ensure systems are always available without downtime	57	17.8
6	Increase merchant acceptance for digital wallet payments	46	14.4
7	Improve security features and protection systems	28	8.8
8	Make applications simpler and easier to use	26	8.1

Note. Multiple responses permitted; percentages may exceed 100%.

Inferential Statistics

Measurement Model Assessment

The internal consistency, convergent validity, and discriminant validity were tested for reliability (Hair et al., 2019). According to Table 4, Cronbach alpha coefficient results are between 0.751 (DW) and 0.909 (TU) which is above the recommended value of 0.70 (Nunnally, 1978). The composite reliability results are in between 0.842 and 0.932 while average variance extracted (AVE) are between 0.572 and 0.733. All the 26 outer loadings results have been found to be higher than 0.70.

Table 4: *Construct Reliability and Convergent Validity*

Construct	Cronbach's α	CR (rho_a)	CR (rho_c)	AVE	√AVE
CO	0.877	0.890	0.910	0.669	0.818
DW	0.751	0.762	0.842	0.572	0.756
PBC	0.847	0.856	0.896	0.683	0.827
PR	0.887	1.086	0.907	0.710	0.843
RA	0.777	0.789	0.856	0.598	0.773
TU	0.909	0.912	0.932	0.733	0.856

Note. CR = Composite Reliability; AVE = Average Variance Extracted; √AVE = Square root of AVE.

Two conditions were used to determine discriminant validity. Using the Fornell-Larcker condition, the square root of each construct's average variance extracted value was greater than its correlation with all other constructs. HTMT ratio, which is a much more stringent measure (Henseler et al., 2015), produced values less than the 0.85 cut-off point for all constructs with TU-DW having the highest

value at 0.451. Cross loading analysis demonstrated discriminant validity, where all items loaded higher in the same construct.

Table 5: *Heterotrait-Monotrait (HTMT) Ratio Matrix*

	CO	DW	PBC	PR	RA	TU
CO	–					
DW	0.327	–				
PBC	0.075	0.318	–			
PR	0.130	0.060	0.092	–		
RA	0.121	0.347	0.089	0.054	–	
TU	0.076	0.451	0.048	0.058	0.065	–

Note. All values below 0.85 confirm discriminant validity (Henseler et al., 2015).

Table 6: *Fornell-Larcker Criterion for Discriminant Validity*

	CO	DW	PBC	PR	RA	TU
CO	**0.818**					
DW	0.269	**0.756**				
PBC	-0.047	0.261	**0.827**			
PR	-0.132	-0.068	-0.047	**0.843**		
RA	-0.092	0.276	-0.060	-0.006	**0.773**	
TU	-0.045	0.378	0.005	-0.063	0.046	**0.856**

Note. Bold diagonal values represent the square root of AVE. Discriminant validity is confirmed when diagonal values exceed off-diagonal correlations.

Table 7: *Outer Loading Matrix*

Indicator	CO	DW	PBC	PR	RA	TU
CO_1	0.823	–	–	–	–	–
CO_2	0.846	–	–	–	–	–
CO_3	0.786	–	–	–	–	–
CO_4	0.811	–	–	–	–	–
CO_5	0.822	–	–	–	–	–
DW_1	–	0.722	–	–	–	–
DW_2	–	0.769	–	–	–	–
DW_3	–	0.807	–	–	–	–
DW_4	–	0.723	–	–	–	–
PBC_1	–	–	0.826	–	–	–
PBC_2	–	–	0.810	–	–	–
PBC_3	–	–	0.841	–	–	–
PBC_4	–	–	0.829	–	–	–
PR_1	–	–	–	0.931	–	–
PR_2	–	–	–	0.851	–	–
PR_3	–	–	–	0.799	–	–
PR_4	–	–	–	0.782	–	–
RA_1	–	–	–	–	0.736	–
RA_2	–	–	–	–	0.762	–

RA_3	–	–	–	–	0.801	–
RA_4	–	–	–	–	0.792	–
TU_1	–	–	–	–	–	0.873
TU_2	–	–	–	–	–	0.839
TU_3	–	–	–	–	–	0.857
TU_4	–	–	–	–	–	0.825
TU_5	–	–	–	–	–	0.887

Note. Values below 0.70 are considered insufficient. All indicators exceeded the threshold.

Structural Model and Hypothesis Testing

Prior to testing the structural model, multicollinearity was checked through the Variance Inflation Factor (VIF) values. Following Hair et al. (2019), the values should be 5.0 or less in order to ensure that multicollinearity is not a concern in the research model. The R^2 value of the Digital Wallet Adoption (DW) construct was also checked in order to establish the explanatory power of the model. In the process of testing the significance of the parameters in the study, SmartPLS bootstrapping was run with 5,000 subsamples in order to calculate the standard error and t-statistics.

According to the structural model outcomes, displayed in Table 8, out of the five proposed relationships four were statistically significant at $p < 0.001$.

Table 8: *Path Coefficients and Hypothesis Testing Results*

Path	β (O)	Mean	STDEV	T-stat	p-value	Decision
CO → DW	0.330	0.330	0.044	7.441	0.000	Supported
PBC → DW	0.294	0.295	0.041	7.144	0.000	Supported
PR → DW	0.015	0.008	0.054	0.276	0.783	Not Supported
RA → DW	0.307	0.308	0.043	7.086	0.000	Supported
TU → DW	0.378	0.377	0.039	9.599	0.000	Supported

Note. β = Path coefficient; M = Sample mean; STDEV = Standard deviation; p < 0.05 = statistically significant.

Trust proved to be the greatest influence on the use of digital wallets ($\beta = 0.378$, $t = 9.599$, $p < 0.001$), which was then followed by Compatibility ($\beta = 0.330$, $t = 7.441$, $p < 0.001$), Relative Advantage ($\beta = 0.307$, $t = 7.086$, $p < 0.001$), and Perceived Behavioral Control ($\beta = 0.294$, $t = 7.144$, $p < 0.001$). Perceived Risk did not prove to have any significant effect ($\beta = 0.015$, $t = 0.276$, $p = 0.783$).

5. Discussion

The findings provide valuable theoretical and practical implications. The influence of trust (β = 0.378) is similar to the findings of previous studies which have identified trust as an important antecedent of e-service adoption (Gefen et al., 2003; Suh & Han, 2002). Digital wallets would largely rely on consumers' trust in the security, reliability and credibility of the providers in a developing digital financial environment as the consumer environment in Nepal is poorly regulated and the levels of institutional trust are lower than usual (Parajuli et al., 2024). The effect of Compatibility (β = 0.330) strongly confirmed the theory proposed by Rogers (2003) that when values, money management practices and lifestyle of the users are compatible with the values, money management practices and lifestyle of the innovation, the innovation is easily adapted. QR payment systems, utility bill payments and mobile banking are being adopted rapidly in urban Nepal, which appears to have created a social and behavioral environment ripe for digital wallet use.

A similar report was mentioned by Kaur et al. (2020) and Nguyen and Tran (2022) regarding about compatibility effects in Asian emerging markets. This also means that being in sync with digital wallet offers the feature of existing consumer habits, which can have a positive impact on adoption. Relative Advantage (β = 0.307), with the highest average score (M = 4.024), represents the positive perception of digital wallet offerings by urban Nepali consumers, as being more efficient, less costly and more convenient than cash and card. They found this result to be in line with Slade et al. (2015) and Chuang et al. (2016) who both reported that perceived usefulness is a major factor that affects the adoption of technology. Perceived Behavioral Control (β = 0.294) is a construct that confirms Ajzen's (1991) TPB theory, which asserts that the confidence one feels in his/her capability to engage in an activity is a factor that will affect his/her intention to do so. It also implies that a greater understanding of users and interface design of digital wallets could contribute to the intention to use. The perceived risk is found to be an inhibitor in adoption behavior, but in the context of the sample group of city dweller adopters of digital wallets (51.9% usage), the perceived risk may be largely reduced due to high level of trust and habit in adopting through well-established services such as eSewa and Khalti. Trust is a risk-reducing factor that can be observed among African countries, as illustrated by the study by Mensah et al. (2024). It suggests that for fully-grown users, trust can be a good remedy to mitigate the influence of perceived risk on behavior. These descriptive findings support these trends. The major issue that users face was problem in dealing with operation and transaction related issues (62.5%), lack of incentives (24.7%) and transaction speed (21.9%). The proposed remedies that were in line with the issues included faster customer services (62.5%), higher transaction speed (25.9%) and better incentive plans (25.0%). The findings are similar to those of Kumar and Singh (2024) and Gomber et al. (2018) that the importance of service quality and operational efficiency is also found in the adoption.

6. Conclusion

In the present study, the factors influencing adoption of digital wallet in Nepal was investigated using constructs of the Diffusion of Innovations (DOI) and Theory of Planned Behavior (TPB). Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) which

was applied on 320 consumers from urban area inside and outside Kathmandu Valley. The results indicated that the variables, Trust, Compatibility, Relative Advantage, and Perceived Behavioral Control have significant positive impacts on digital wallet adoption, while the variable Perceived Risk did not show any statistically significant impacts on the intention to adopt the digital wallet. The study is an important contribution to existing literature on fintech and digital payment, given the scarcity of empirical research on the phenomenon in the context of the developing world and the absence of such studies in Nepal. The study has expanded the scope of DOI and TPB for use in Nepal's developing digital financial landscape, adding to the context-specific understanding of consumer attitudes towards digital wallet technologies in developing markets. The importance of the role of trust points to the need for digital wallet providers, financial institutions, and regulators to build up the security infrastructure, privacy protection mechanisms, and institutional trustworthiness to boost the confidence of consumers in digital financial services. Furthermore, the strong impact of Compatibility and Relative Advantage indicates that the adoption can be facilitated if the digital wallet services are well integrated with the users' current financial transactions and daily routines, and if they offer tangible and well-defined benefits, such as convenience and efficiency, and cost savings. The findings provide important policy and service provider strategic considerations to advance sustainable digital financial inclusion and overall digital payment technology penetration in Nepal.

There were several avenues for future research in this study. Further, future research could investigate how perceived risk and trust among rural population in Nepal relate to each other by using a stratified sampling method, which would allow for a more detailed understanding of the differences between various regions and population groups in terms of their digital wallet adoption behaviors. Secondly, future studies can build on the current framework by adding other constructs of the Unified Theory of Acceptance and Use of Technology (UTAUT2) like hedonic motivation, social influence, and habit to improve the explanatory power of digital payment adoption models in emerging economies. Lastly, longitudinal studies are suggested for capturing the changes in consumer adoption patterns over time as the digital payment ecosystem continues to evolve in Nepal. Future research should also focus on the impact of new financial innovations like Central Bank Digital Currency (CBDC), open banking systems, and other fintech innovations on long-term adoption and usage of digital wallets.

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