

# **Customer Retention in E-Payments: Identifying the Key Determinants**

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### Abstract

This study examines how key factors such as Customer Trust, Customer Service, Ease of Use, Transaction Transparency, and Perceived Security influence Customer Retention in digital payment systems in Nepal. Furthermore, the study examines the difference in users' perceived security across different genders. Moreover, the study seeks to examine whether perceived ease of use is associated with age groups and whether there is an association between the frequency of use and customer retention in digital payment systems. A quantitative research method was employed, with a sample size of 250 respondents from and near the Kathmandu Valley. The collected data were coded in SPSS for descriptive and inferential analysis, using Regression Analysis, Independent Sample t-tests, and chi-square tests to assess the relationship between the variables. The findings found that customer retention was significantly influenced by ease of use, transaction transparency, and perceived security. In contrast, customer trust and customer service do not show a statistically significant impact. Furthermore, there was no difference in perceived security across different genders. There is a significant association between age group and perceived ease of use. Moreover, there is a significant association between the frequency of use and customer retention in digital payment systems.

*Keywords*: e-payment, customer retention, customer trust, customer service, ease of use, transaction transparency, perceived security

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### Article History

Received: 2025, July 21 First Revised: 2025, Aug 24 Second Revised: 2025, Sept 28 Accepted: 2025, Oct 26

#### Cite

Pradhan, S., Shrestha, Y., Gurung, P. D., & Munikar, S. (2025). Customer retention in e-payments: Identifying the key determinants. *New Perspective: Journal of Business and Economics*, 8(1), 7–18. https://doi.org/10.3126/npjbe.v8i1.85255

### Introduction

Nepal's digital payment landscape is rapidly expanding, driven by smartphone penetration exceeding 73% of the population, facilitating widespread adoption of electronic payment systems such as digital wallets and mobile and online banking (Republica, 2023). Payment Service Providers (PSPs) like eSewa, Khalti, IME Pay, and Fonepay have become prominent due to their convenience, accessibility, and speed (Rouibah et al., 2016). However, amid intensifying competition, customer retention remains a critical challenge. Retaining customers defined as the

ability to engage users for repeated transactions is fundamental to PSP success (Arif et al., 2023). Key factors influencing retention include transparent and secure transactions, efficient customer service, and building trust, which is especially crucial in safeguarding funds and personal data from fraud (Mastran & Bhandari, 2022; Naik et al., 2024). Additionally, attributes such as ease of use, transaction transparency, authentication processes, and fraud detection mechanisms contribute significantly to consumer confidence and long-term engagement (Hossain et al., 2024; Rahman et al., 2024).

### **Problem Statement**

While trust, ease of use, security, transparency, and customer service have been individually linked to digital payment adoption and retention, the literature presents contradictions. For example, Naik et al. (2024) affirm trust's positive role in system adoption, whereas Rahman et al. (2024) find trust negatively affects continued mobile wallet usage. Similarly, while performance expectancy and perceived usefulness aid initial adoption, their role in sustained retention is less clear (Arif et al., 2023). Security concerns, including inadequate protections and cyber fraud, have been shown to deter trust in Nepalese e-payments (Dangol & Kautish, 2019). Prior research lacks a comprehensive examination of service-related factors influencing customer retention in Nepal's burgeoning e-payment sector. Contradictory findings surrounding trust's role and other service dimensions underscore the necessity to explore their combined effects. Moreover, moderating influences such as demographic variables (gender, age, usage frequency) remain under-investigated in shaping user perceptions and behaviors in Nepalese digital payment systems.

Such mixed findings highlight the need for an integrative study assessing how these factors collectively influence retention within Nepal's dynamic financial technology context.

# **Research Objectives**

This study aims to:

- Investigate the impact of customer trust, customer service, ease of use, transaction transparency, and perceived security on customer retention in e-payment systems in Nepal.
- Examine how user demographics specifically gender, age group, and frequency of digital payment usage affect perceptions of security, ease of use, and retention.

By addressing these objectives, the study seeks to provide practical insights for Payment Service Providers to enhance user satisfaction and foster sustainable customer engagement in Nepal's digital payment market.

### Literature Review

Mastran and Bhandari (2022) investigated determinants including performance kev expectancy, effort expectancy, social influence, facilitating conditions, and trust-on users' behavioral intention to adopt digital wallets utilizing the Unified Theory of Acceptance and Use of Technology (UTAUT) model. Their findings confirm that trust, performance expectancy, effort expectancy, and social influence significantly drive adoption intentions, while facilitating conditions showed no substantial effect. Complementing this, Naik et al. (2024) demonstrated through surveybased analysis that consumer trust significantly fosters adoption of digital payment systems and enhances merchant operational efficiency, thereby improving financial outcomes.

Hossain et al. (2024) explore the role of security, convenience, and transaction transparency in cultivating customer trust and loyalty within e-commerce payment systems, underscoring secure and user-friendly platforms as essential for sustained engagement. However, Rahman et al. (2024), applying Technology Continuance Theory (TCT), reveal a nuanced perspective where trust paradoxically exerts a negative impact on consumers' continued use of mobile wallets. although gamification positively influences ease of use and attitudes toward ongoing engagement. Sujith and Julie (2017) identify challenges such as data theft, overspending, and reliance on intermediaries as substantial barriers, while acknowledging convenience and spending tracking as notable benefits.

Rouibah et al. (2016) report that perceived enjoyment and trust significantly drive online payment adoption in Kuwait, offsetting perceived risks. Similarly, Junadi and Sfenrianto (2015) confirm that performance expectancy, effort expectancy, social influence, facilitating conditions. culture, and perceived security positively affect Indonesian consumers' e-payment adoption intent, employing an extended UTAUT framework. Chaveesuk et al. (2021) also emphasize convenience, ease of use, trust, security, and social influence as key factors promoting digital payment usage and enhancing customer experience.

Ting et al. (2016) highlight cultural variables by investigating the impact of ethnicity on mobile payment adoption in emerging markets, finding that social influence differentially shapes adoption intentions across ethnic groups via perceived usefulness and ease of use. In Nepalese contexts, Kayastha and Paudel (2022) identify customer service quality and low transaction fees as primary determinants of PSP effectiveness while noting security's comparatively minor role in perceived service performance.

Magar et al. (2023) employ Structural Equation Modeling (SEM) to conclude that perceived credibility, usefulness, ease of use, and social influence positively influence user satisfaction and behavioral intention toward e-payment adoption in Nepal. Arif et al. (2023) focus on customer retention factors for the Touch 'n Go platform, finding that convenience, security, ease of use, and price benefits significantly enhance retention, whereas perceived usefulness does not. Jou et al. (2022) analyze electric utility payment services, demonstrating that service tangibility and responsiveness impact quality and satisfaction, with security and COVID-19 protocols exhibiting significant influence on customer satisfaction.

Extending the discussion on factors influencing customer retention and operational efficiency, studies by (Mishra et al., 2020) provide important insights applicable to Nepal's digital payment landscape. Mishra et al. (2020) analyze economic operations in the Gautam Buddha Airport upgrading project, highlighting how efficient resource management and operational practices drive performance outcomes—principles relevant for Payment Service Providers (PSPs) striving for seamless, reliable digital transactions. Similarly,

Mishra and Jha (2019a) assess the credit policy structure and sales trends of Sarbottam Cement, illustrating how strategic financial management influences market success, which parallels the need for transparent and accessible financial features within digital payment platforms to foster user retention. In related work, Mishra and Jha (2019b) examine Sarbottam Cement's product quality, underscoring the importance of trust and consistent performance as determinants of customer satisfaction, an insight crucial for PSPs addressing concerns over transaction security and reliability.

Operational efficiency and cost-effectiveness studies by Mishra and Chaudhary (2018a) on Nepalese cement brands further reinforce the significance of user-friendly processes and cost-conscious service delivery, echoing consumer expectations for convenient and affordable digital payment solutions. Their assessment of cement handling behavior at retail sites (Mishra & Chaudhary, 2018b) similarly reflects the impact of process smoothness and service quality on customer experience, applicable to PSPs managing transaction flows and resolving user issues.

Expanding beyond resource-intensive industries, Mishra and Aithal (2021a,b) investigate laptop users' purchase behavior in Kathmandu, revealing that factors such as usability, product features, and consumer preferences heavily influence purchase decisions. These consumer behavior patterns mirror those in digital payment adoption, where ease of use, feature accessibility, and user trust play pivotal roles.

In the domain of financial technology, Celestin and Mishra (2025) explore how data analytics revolutionizes forensic accounting and fraud detection, emphasizing the increasing importance of real-time monitoring and analytics in safeguarding financial transactions. Complementing this, Celestin et al. (2025) discuss real-time financial reporting adaptations to growing demands for instantaneous insights, underscoring the technological shifts that digital payment systems must adopt to meet

evolving customer expectations for transparency and security.

Collectively, these studies underscore the centrality of operational efficiency, trustworthiness, user-centric design, and advanced analytics in shaping customer retention and overall performance, offering a comprehensive lens through which Nepalese PSPs can better understand and address the evolving needs of digital payment users.

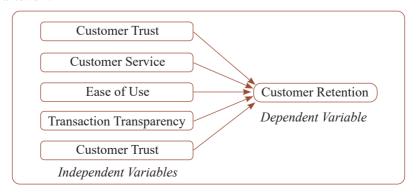
While existing literature establishes numerous individual factors influencing digital payment adoption and retention, the complex interactions among customer trust, service quality, ease of use, transaction transparency, and security within Nepalese digital payment systems remain insufficiently explored. Contradictory findings, particularly concerning the role of trust—positive in some studies (Naik et al., 2024) and negative in others (Rahman et al., 2024) highlight the need for deeper investigation to clarify its influence on retention. Additionally, demographic variables and usage patterns influencing these perceptions and behaviors warrant further analysis to better tailor PSP strategies in Nepal's evolving fintech landscape.

### **Operational Definition**

Customer Trust: Defined as users' confidence and willingness to engage in digital transactions under the belief that PSPs act in their best interest,

- ensuring security and privacy (Mastran & Bhandari, 2022; Naik et al., 2024; Poudel & Sapkota, 2022).
- Customer Service: The effectiveness Λ and quality of support provided by PSP operators in resolving payment-related issues and ensuring seamless transaction experiences (Jou et al., 2022).
- Ease of Use: The perceived simplicity and effortlessness associated with using an e-payment system, which influences adoption and continued usage (Magar et al., 2023; Rahman et al., 2024; Chaveesuk et al., 2021).
- **Transaction Transparency:** The 0 degree of openness and clarity regarding transaction details, fees, and policies that cultivates user confidence and reduces uncertainty (Hossain et al., 2024).
- 0 Perceived Security: Users' confidence in protective measures implemented by PSPs to safeguard financial transactions, user data, and prevent fraud or unauthorized access (Poudel et al., 2023; Hossain et al., 2024).
- Customer Retention: The ability of a digital payment system to maintain ongoing user engagement and repeated usage, preventing customer attrition to competitors (Arif et al., 2023).

Figure 1 Conceptual Framework



Based on the above contextual framework, the following hypotheses were formulated:

- H1: Consumer trust has a significant impact on Customer Retention.
- H2: Customer service has a significant impact on Customer Retention.
- H3: Ease of use in payment has a significant impact on Customer Retention.
- H4: Transparency of transactions a significant impact on Customer Retention.
- H5: Perceived Security has a significant impact on Customer Retention.
- H6: There is a significant difference in the perceived security of digital payment systems between male and female users.
- H7: There is a significant association between age group and perceived ease of use of digital payment systems.
- H8: There is a significant association between the frequency of use and customer retention in digital payment systems.

## Methodology

This research is quantitative as it focuses on understanding how factors such as trust, ease of use, perceived security, transaction transparency, and customer service influence customer retention in using E-payment systems through statistical analysis. This research will use primary data, which will be obtained from questionnaires. Since the respondents for this questionnaire are potential customers or users of E-Payment Systems, the unit of analysis in this study would be individual potential customers.

This study's population includes users of Electronic Payment Systems or Payment Service Providers who frequently use E-Payment services. It primarily focuses on consumers using PSPs in and around Kathmandu Valley. The Questionnaire prepared for this study contains 25 items. Hence, by using the thumb rule of 1/10 proportionate, our sample size is 250. A convenient sampling method was used because there is an absence of an exact database for Customer Retention (Nikolopoulou, 2022). The study was conducted in and around Kathmandu Valley, Lalitpur, and Bhaktapur with a total sample size of 250, which is divided based on the proportion of the population in each of the three districts. The respondents from Kathmandu, with the largest population, are 148, followed by Lalitpur with 67 respondents. Lastly, with the smallest sample size from Bhaktapur, we have 35 respondents.

A set of questionnaires containing 25 items was developed using a 5-point Likert-type scale where 1 stands for strongly disagree and 5 stands for strongly agree (McLeod, 2023). Furthermore, a pilot test was conducted among 20 respondents to evaluate the feasibility and potential issues with the questionnaire (Williams, 2023). For this, data collection was done through online forms and surveys. After conducting the pilot testing, the feedback received was incorporated, and a final questionnaire was prepared for efficient data collection in the field. For the internal validity of the questionnaire, Cronbach's Alpha was applied to measure the reliability of the items of the questionnaire. The external validity of the data was done using sorting, screening, and consistency tests. The collected data were coded into SPSS for further analysis. Regression Analysis, Independent Sample t-tests, and Chi-Square Tests were employed for both descriptive and inferential analysis of this study and to assess the relationship between the variables.

### **Results and Discussion**

The study found that ease of use, transaction transparency, and perceived security significantly influence customer retention in digital payment systems in Nepal, while customer trust and service do not. Age was associated with perceived ease of use, and frequency of use was linked to customer retention, but no gender differences were found in perceived security.

Table 1 Result of Reliability Analysis

Item	Cronbach's Alpha	No. of Items		
Customer Trust	0.809	4		
Customer Service	0.842	4		
Ease of Use	0.837	5		
Transaction Transparency	0.786	4		
Perceived Security	0.829	3		
Customer Retention	0.778	5		
Overall	0.937	25		

Table 1 demonstrates that the Cronbach Alpha of six variables, Customer Trust (0.809), Customer Service (0.842), Ease of Use (0.837), Transaction Transparency (0.786), Perceived Security (0.829), and Customer Retention (0.778), have values well above the accepted threshold of 0.70. This confirms

that the items within each variable reliably measure the same underlying concept. Additionally, the overall Cronbach's Alpha across all 25 items is 0.937, indicating consistency throughout the questionnaire.

Table 2 Demographic Profile of Respondents

Variable	Category	Frequency	Percent
Age	18-24	155	62.0
	25-34	62	24.8
	35-44	19	7.6
	45-54	9	3.6
	55 and above	5	2.0
	Total	250	100.0
Gender	Male	126	50.4
	Female	124	49.6
	Total	250	100.0
Education	High School or Below	39	15.6
	Undergraduate Degree	155	62.0
	Postgraduate Degree	52	20.8
	Others	4	1.6
	Total	250	100.0

Variable	Category	Frequency	Percent
Occupation	Student	127	50.8
	Employed (Full-time/Part-time)	76	30.4
	Self-Employed	35	14.0
	Unemployed	11	4.4
	Retired	1	.4
	Total	250	100.0
Frequency of use	Daily	162	64.8
	Weekly	56	22.4
	Monthly	17	6.8
	Rarely	15	6.0
	Total	250	100.0

As per the data in Table 2, the number of respondents was 250, with those between 18 and 24 years and the other set of respondents between 25 and 34 years forming a total of 86.8%. This demonstrates that the younger crowd is more engaged in digital payment systems. The older population users accounted for merely 13.2%, showing faint participation from aged users. The proportion of males and females in the sample is almost equal, hence a balanced gender perspective. Furthermore, having at least an undergraduate and postgraduate degree accounted for 82.8% of the sample population in terms of the likelihood

of realizing and comprehending digital financial technologies. Students constituted nearly half of the sample (50.8%), and employed individuals accounted for 44.4%, further attesting to a youth-oriented and economically active sample. Regarding usage, 64.8% reported daily use, while 22.4% used them weekly. Only a small number made monthly or rare usage occurrences, demonstrating that the vast majority are frequent and habitual users of a digital payment system. This kind of frequent interaction spells great relevance for the study of customer retention in the digital pay context.

**Table 3** *ANOVA for Regression* 

Model	Sum of Squares	df	Mean Square	F	Sig.	R Square	Adjusted R Square
Regression	69.171	5	13.834	70.377	.000b	.591	.582
Residual	47.964	244	.197				
Total	117.135	249					

Note. Predictors: (Constant), Perceived Security, Customer Service, Transaction Transparency, Customer Trust, Ease of Use

Table 3 shows that the overall regression model was statistically significant at F(5, 244) = 70.377, with a p-value less than 0.05, confirming a robust model fit after accounting for the number

of predictors. The model yielded an adjusted R<sup>2</sup> of 0.582, indicating that the combination of predictors causes 58.2% variance in customer retention.

Table 4 Coefficients

Model	Unstandardiz	ed Coefficients	Standardized Coefficients	t	Sig.	
Model	В	Std. Error	Beta	ι		
(Constant)	.700	.178		3.931	.000	
Avg_CT	.084	.050	.092	1.683	.094	
Avg_CS	.040	.050	.045	.811	.418	
Avg_EOU	.349	.055	.369	6.366	.000	
Avg_TT	.188	.049	.221	3.878	.000	
Avg_PS	.173	.053	.197	3.296	.001	

In Table 4, the study analyzes that Customer Trust and Customer Service have significant values of 0.094 and 0.418, respectively. Since the p-value is greater than 0.05, the null hypothesis is accepted. This suggests that Customer Trust and Customer Service have no significant influence on customer retention.

However. Ease of Use. Transaction Transparency, and Perceived Security have a p-value less than 0.05, rejecting the null hypothesis for all cases, indicating that Ease of Use, Transaction Transparency, and Perceived Security have a significant influence on customer retention.

Table 5 Independent Sample Tests

		Leveno for Eq of Var			t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		eff. Interval Difference	
						(2-taneu)	Difference	Difference	Lower	Upper	
Avg_ PS	Equal variances assumed	2.246	.135	160	248	.873	01587	.09909	21104	.17930	
	Equal variances are not assumed.			160	242.342	.873	01587	.09896	21080	.17906	

Note. Field Survey

As per Table 5, an independent sample t-test was conducted to determine whether there is a significant difference in the perceived security between male and female users of digital payment systems. The results of the t-test showed a

p-value of 0.873, greater than 0.05, accepting the null hypothesis, implying that the difference in perceived security between males and females is not statistically significant.

Table 6 Chi-Square Tests

Variable	Test Type	Value	df	Asymptotic Significance (2-sided)
Perceived Ease of Use	Pearson Chi-Square	101.985a	68	0.005
across Different Age	Likelihood Ratio	69.544	68	0.425
Groups	N of Valid Cases	250		
Customer Retention	Pearson Chi-Square	76.975a	51	0.011
Levels Across Different Frequencies of Usage	Likelihood Ratio	60.961	51	0.16
	N of Valid Cases	250		

As per Table 6, A chi-square test was conducted to evaluate the association between perceived ease of use of digital payment systems and different age groups. The null hypothesis, which stated no significant association between ease of use and age, was rejected based on a p-value of 0.005 (< 0.05). This indicates a statistically significant relationship, suggesting that younger users generally perceive digital payment platforms as easier to use compared to older users. This result aligns with Chaveesuk et al. (2021), who identified a close connection between digital literacy, age, and the perception of ease of use.

Similarly, a chi-square test assessing the relationship between customer retention and frequency of use yielded a significant association (p = 0.011 < 0.05). This finding suggests that more frequent users of digital payment services are more likely to remain loyal customers, supporting Arif et al. (2023) conclusion that habitual usage fosters long-term retention.

The study further identified that ease of use, transaction transparency, and perceived security significantly and positively influence customer retention. These findings are consistent with previous research emphasizing functional and system-based attributes as primary drivers of retention. For example, Hossain et al. (2024) demonstrated that usability and transparency are critical in cultivating trust and loyalty in e-commerce platforms. Likewise, Rouibah et al. (2016) highlighted perceived security's central

role in maintaining ongoing user engagement with digital payment solutions.

However, contrary to much prior work, customer trust and customer service did not exhibit a statistically significant impact on customer retention in this Nepalese context. This suggests that relational factors may be secondary to functional concerns among Nepalese digital payment users. While studies by Mastran and Bhandari (2022), Naik et al. (2024), and Poudel and Sapkota (2022) emphasize trust's fundamental role in adoption and retention, the current results imply a contextual behavioral shift focusing more on system reliability and convenience than interpersonal elements. Supporting this view, Wu and Tang (2022) found that omnichannel retail users prioritize system reliability and accessibility over interpersonal trust. Similarly, Zhengmeng et al. (2024) observed cultural differences where trust predicts retention in China but not in Pakistan. Aryal (2021) also reported that Nepalese users' perceptions of e-payment are significantly influenced by benefits, ease of use, and security but not trust.

Regarding demographic factors, no significant gender differences emerged in perceived security, as confirmed by the independent t-test. This outcome contrasts with Undale et al. (2020), who suggested greater security concerns among female users. The lack of gender-based disparities supports the notion that security communication strategies in Nepal can be gender-neutral.

In summary, the findings highlight that in Nepal's digital payment ecosystem, functional attributes—ease of use, transparency, and security dominate customer retention determinants, while relational aspects such as trust and customer service have diminished roles. This suggests the importance of tailoring service design and communication strategies to cultural and technological contexts, acknowledging the specific behavioral patterns of Nepalese users.

For digital payment service providers in Nepal, these findings emphasize the need to prioritize platform usability, transaction transparency, and robust security measures to enhance customer retention. Given the association between age and perceived ease of use, providers should consider interface customization or digital literacy initiatives targeting older users to broaden adoption. The absence of gender differences in security perception suggests that security messaging can be uniformly applied across male and female users. Moreover, fostering habitual use through loyalty programs or incentives could effectively enhance long-term customer retention and platform engagement.

#### Conclusion

This study examined key factors influencing customer retention in Nepal's digital payment systems, focusing on customer trust, customer service, ease of use, transaction transparency, and perceived security. It further explored demographic variations in perceived security by gender, the association of ease of use with different age groups, and the relationship between usage frequency and retention levels. Employing multiple regression, independent samples t-tests, and chi-square tests to test eight hypotheses, the results demonstrated that ease of use, transaction transparency, and perceived security significantly and positively impact customer retention, confirming hypotheses H3, H4, and H5. In contrast, customer trust and customer service did not show statistically significant effects on retention, leading to the rejection of hypotheses H1 and H2. Demographically, perceived security

did not differ between male and female users (rejecting H6), while significant associations were found between age groups and perceived ease of use as well as frequency of use and retention. supporting hypotheses H7 and H8. These findings highlight the primacy of functional system attributes over relational factors in driving retention among Nepalese digital payment users and underscore the influence of age and usage habits on user experiences.

### **Limitations and Future Scope**

This study has certain limitations. Firstly, the sample size was limited to 250, which may affect the generalizability of the results. Secondly, data collection was restricted to areas around Kathmandu Valley, where digital payment adoption is higher than in rural regions. Therefore, the findings serve as indicators rather than definitive conclusions for the entire country. Third, the cross-sectional nature of the study captures user behavior at a single point in time, rather than over a longer duration.

Future research could expand this study to a national scale, incorporating diverse geographical and socio-economic groups. Additionally, scholars may explore the impact of other psychological or behavioral factors, such as loyalty or satisfaction, as moderating variables, which could offer deeper insight into customer retention mechanisms. A longitudinal study could also help track changes in user behavior over time as digital infrastructure continues to evolve in Nepal.

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