Impact of Internet Banking Services on Customer Satisfaction in Nepalese Commercial Banks: A Study of Bardiya District

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Abstract

This study examines the impact of internet banking service adoption on customer satisfaction in Nepalese commercial banks, focusing on payment security, perceived ease of use, perceived credibility, and customer attitude as key determinants. A quantitative descriptive research design was employed, with data collected from 384 respondents through a structured questionnaire using convenience sampling. Data analysis was conducted using descriptive statistics, reliability testing, and multiple regression analysis. The findings reveal that internet banking services are generally perceived positively, with payment security emerging as the most significant predictor, followed by perceived ease of use and perceived credibility. The regression model explains a substantial proportion of variance in customer satisfaction, indicating strong explanatory power. However, customer attitude shows a positive but statistically insignificant effect. The study highlights the importance of secure, reliable, and user-friendly digital banking systems to enhance customer satisfaction and promote the growth of internet banking services in Nepal.

Keywords: *Customer Satisfaction, Internet Banking, Payment Security, Perceived Ease of Use, Perceived Credibility*

Background

The banking sector has undergone a profound transformation driven by rapid digital technology integration. Internet banking services have fundamentally shifted traditional banking by enabling customers to conduct financial transactions online—via mobile applications, web portals, and ATMs—without geographic or temporal constraints (Karjaluoto, Mattila, & Pento, 2002). This digital shift has not only improved operational efficiency but also widened financial accessibility, enabling activities such as fund transfers, bill payments, and loan management anytime and anywhere. As a consequence, internet banking has become central to modern financial services, reflecting growing digital literacy and technological adoption among consumers (Chaudhary & Shakya, 2024).

Customer satisfaction in internet banking is closely linked to the personalization and user-friendliness of services. Financial institutions increasingly deploy AI-based tools, chatbots, and customized financial management applications to enhance experience (Fernandes, 2016). Research demonstrates that reliability, security, and intuitive design are essential determinants of satisfaction, influencing both adoption rates and long-term platform loyalty (Lichtenstein & Williamson, 2006; Kim, Kim, & Lee, 2017).

Challenges such as privacy concerns, data security breaches, and digital literacy gaps remain significant barriers. Customers' trust and confidence in online banking platforms are shaped by perceptions of security and ease of use (Manzoor, 2011). Addressing these challenges requires banks to implement robust cybersecurity measures and promote digital literacy programs, particularly for underserved populations (Ghimire, 2022).

In Nepal, internet banking adoption has expanded rapidly, with mobile banking and e-wallet services gaining traction among younger consumers. According to

Nepal Rastra Bank (NRB, 2023), mobile banking users reached 17,676,259 as of May 2023—a 1.66% year-on-year increase—underscoring the growing dependence on digital channels. Mobile banking now facilitates a wide range of activities, including QR code payments, utility bill settlements, and fund transfers, demonstrating the transformative role of technology in reshaping the Nepalese financial landscape.

Despite this growth, limited scholarly attention has been directed at understanding satisfaction determinants in semi-urban districts such as Bardiya. This study addresses that gap by examining the factors that most significantly shape customer satisfaction with internet banking in this context.

Research Objectives

- To examine the impact of Payment Security, Perceived Ease of Use, Perceived Credibility, and Customer Attitude on customer satisfaction in Nepalese commercial banks.
- To identify the most significant factor affecting customer satisfaction with internet banking services.

Literature Review

Internet Banking Services and Customer Satisfaction.

The adoption of internet banking services represents a transformative shift in banking, with profound implications for customer satisfaction. Internet banking offers unparalleled convenience, enabling clients to perform financial transactions at any time and from any location, eliminating the constraints of physical branch visits. This empowerment leads to higher satisfaction and a sense of control over personal finances (Ghimire et al., 2022). Furthermore, digital banking enhances service delivery efficiency by streamlining transaction processes, reducing wait times, and minimizing customer effort (Lama, 2021).

Security is a critical determinant of satisfaction. Robust security measures foster confidence and trust, reinforcing the credibility and dependability of internet banking platforms (Paudel & Kandel, 2025). Research consistently identifies payment security as a top priority for banking customers when evaluating digital services

Components of E-Banking.

Online banking platforms allow customers to access accounts through web browsers, providing 24/7 availability and services such as fund transfers, balance inquiries, and bill payments (Karjaluoto et al., 2002). Mobile banking applications extend convenience further by enabling biometric authentication, instant notifications, QR code payments, and digital wallet integration (Kim, Kim, & Lee, 2017). These components collectively expand financial inclusion, particularly in urban and semi-urban areas (Ozili, 2018).

Theoretical Frameworks.

Perceived Risk Theory

Perceived Risk Theory (Bauer, 1960) highlights the uncertainty and negative outcomes consumers associate with product or service use, identifying financial, performance, social, and security risks (Cox & Rich, 1964; Featherman & Pavlou, 2003). In the Nepalese context, this framework helps explain how perceived security risks reduce customer satisfaction and inhibit adoption of internet banking services.

Self-Service Technology (SST) Theory

SST Theory (Meuter et al., 2000) emphasizes the role of automated service channels—ATMs, online portals, mobile applications—in enhancing customer experience through greater convenience, control, and speed. In Nepal, mobile banking apps exemplify SSTs by enabling independent financial transactions.

The convenience, efficiency, and control afforded by these technologies are positively linked to customer satisfaction and loyalty (Laukkanen, 2016).

Technology Acceptance Model (TAM)

Davis (1989) introduced TAM, establishing Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) as the two primary determinants of technology adoption. These perceptions shape user attitudes and behavioral intentions, ultimately influencing actual usage. In the context of Nepalese internet banking, TAM provides valuable insights into how user-friendly interfaces, secure transaction processes, and practical benefits influence satisfaction and adoption (Alalwan, Dwivedi, & Rana, 2017; Subedi & Tamang, 2023).

Empirical Review

A substantial body of international and Nepalese empirical literature informs this study. Chaudhary et al. (2024) found that belief (customer trust) was the strongest predictor of digital banking adoption in Lalitpur, Nepal, followed by performance expectancy and social influence. Kandel (2024) demonstrated that perceived usefulness, ease of use, and trust significantly predicted digital banking adoption, with younger, more educated, and higher-income individuals showing higher adoption rates. Shrestha and Kayestha (2024) emphasized that trust and security are central to customers' willingness to adopt internet banking in Kathmandu Valley.

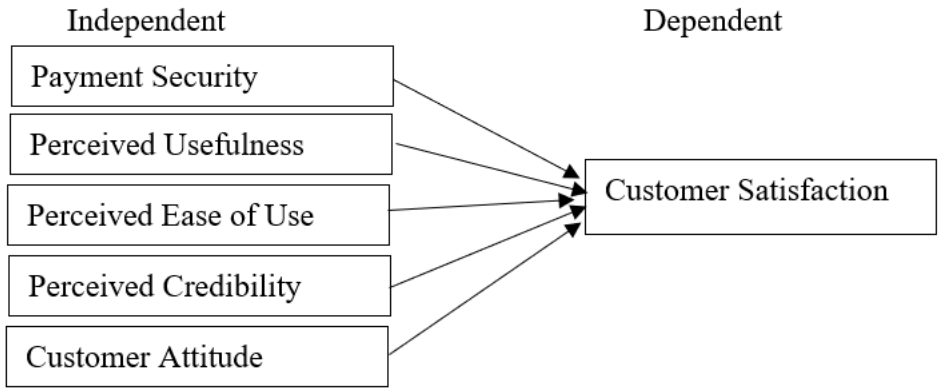
Internationally, Yamen (2023) found that ease of use had a stronger effect on consumer attitudes toward online banking than perceived usefulness in Kuwait. Zainordin et al. (2022) identified convenience—access anytime and anywhere—as the primary driver of e-banking adoption in Malaysia. Sigdel and Amponsah (2022) found that performance expectations, effort expectations, and facilitating conditions significantly influenced e-banking usage in Pokhara, Nepal. These

studies collectively confirm that perceived usefulness, ease of use, security, and trust are critical determinants of e-banking satisfaction and adoption globally.

Conceptual Framework

Figure 1

Conceptual Framework



Source: Researcher Develop the framework based on TAM and SST Theories

Hypothesis

H1: The regression model is statistically significant there is a significant linear relationship between the independent variables and Customer Satisfaction.

H2: Payment Security has a significant positive effect on Customer Satisfaction.

H3: Perceived Usefulness has a significant positive effect on Customer Satisfaction.

H4: Perceived Ease of Use has a significant positive effect on Customer Satisfaction.

H5: Perceived Credibility has a significant positive effect on Customer Satisfaction.

H6: Customer Attitude has a significant positive effect on Customer Satisfaction.

Research Methodology.

Research Design.

A descriptive research design was employed to systematically explore customer perceptions and experiences with internet banking in Nepalese commercial banks. This design enabled structured, quantitative data collection through questionnaires, allowing the study to capture customer behaviors, perceptions, and satisfaction levels at a specific point in time without manipulating variables (Kothari, 2004). Descriptive statistics including means, percentages, and frequency distributions were used to identify trends and patterns, providing a clear snapshot to support inferential analysis.

Population and Sampling.

The target population comprised all active internet banking users in Nepalese commercial banks. Since the total population was unknown, Cochran's (1977) formula for unknown populations was applied to determine the sample size. Using a 95% confidence level (Z = 1.96), maximum variability (p = 0.5), and a 5% margin of error (E = 0.05):

$$n = Z^2 \times p(1 - p) / E^2 = (1.96)^2 \times 0.5 \times 0.5 / (0.05)^2 = 384.16 \approx 384$$

A total of 384 respondents were selected through convenience sampling, targeting readily accessible internet banking users across Bardiya District.

Data Collection Instrument

A structured questionnaire comprising five-point Likert scale items (1 = Strongly Disagree to 5 = Strongly Agree) was developed to measure the study constructs. Six dimensions were operationalized: Payment Security (5 items), Perceived Usefulness (5 items), Perceived Ease of Use (5 items), Perceived Credibility (5 items), Customer Attitude (5 items), and Customer Satisfaction (5 items). Open-ended questions were included to capture qualitative insights. The instrument

was refined through a pilot test administered to academic professionals, with feedback incorporated to enhance clarity and relevance.

Data collection

Primary data were collected through the structured questionnaire survey administered to internet banking users in Nepalese commercial banks in Bardiya District. Responses were gathered in 2025 under a schedule coordinated with participating banks. Continuous consultation with respondents during collection ensured accuracy and completeness of data.

Data Analysis Tools and Techniques

Data were organized in Microsoft Excel and subsequently imported into SPSS (Statistical Package for Social Sciences) for analysis. The analytical approach involved: (a) descriptive statistics (frequencies, means, standard deviations) to profile respondents and summarize variable distributions; (b) Cronbach's alpha reliability analysis to verify internal consistency of measurement instruments; and (c) multiple regression analysis to assess the influence of independent variables on Customer Satisfaction. The regression model is specified as:

$$CS = \alpha + \beta_1 PS + \beta_2 PU + \beta_3 PEOU + \beta_4 PC + \beta_5 CA + \varepsilon_i$$

Where CS = Customer Satisfaction; PS = Payment Security; PU = Perceived Usefulness; PEOU = Perceived Ease of Use; PC = Perceived Credibility; CA = Customer Attitude; α = constant; β_i = regression coefficients; ε_i = error term.

Data Analysis and Results.

Demographic profile of Respondents

Table 1 presents the demographic characteristics of the 384 respondents. Males constituted 58.3% (n = 224) and females 41.7% (n = 160), indicating slightly higher male engagement in internet banking while both genders actively participate. The dominant age group was 25–34 years (49.2%), confirming that younger adults are the primary users of digital banking platforms. Most

respondents held bachelor's degrees (39.1%) or higher, highlighting a strong association between higher education and internet banking adoption.

Regarding occupation, students formed the largest group (36.5%), followed by government employees (21.1%). Income distribution spanned multiple brackets, with 35.2% earning below NPR 30,000, indicating internet banking adoption across all income levels. A majority of respondents (53.6%) had used internet banking for more than three years, suggesting high trust and familiarity with digital banking services. Nearly half (46.1%) accessed internet banking daily, underscoring the critical role of digital platforms in everyday financial management.

Table 1

Demographic Profile of Respondents (N = 384)

Variable	Category	Frequency	Percent (%)
Gender	Male	224	58.3
	Female	160	41.7
Age Group	Below 24 years	64	16.7
	25–34 years	189	49.2
	35–44 years	83	21.6
	45–54 years	41	10.7
	55 and above	7	1.8
Education Level	Below SLC	20	5.2
	SLC/SEE	30	7.8
	+2/Intermediate	121	31.5

Variable	Category	Frequency	Percent (%)
	Bachelor's Degree	150	39.1
	Master's Degree	63	16.4
Occupation	Student	140	36.5
	Government Employee	81	21.1
	Agriculture	65	16.9
	Business	52	13.5
	Self-Employed	46	12.0
Monthly Income (NPR)	Below 30,000	135	35.2
	30,001–50,000	98	25.5
	50,001–70,000	67	17.4
	70,001–90,000	37	9.6
	Above 90,000	47	12.2
Duration of IB Usage	Less than 6 months	38	9.9
	6 months–1 year	53	13.8
	1–3 years	87	22.7
	More than 3 years	206	53.6

Variable	Category	Frequency	Percent (%)
Frequency of IB Use	Daily	177	46.1
	Weekly	70	18.2
	Monthly	75	19.5
	Occasionally	62	16.1

Source: Field Survey, 2025

Reliability and validity.

Cronbach's alpha was computed for all study variables to assess internal consistency, following the threshold of ≥ 0.70 recommended by Nunnally (1978). As presented in Table 2, all constructs exhibited acceptable to good reliability, confirming the suitability of the measurement instrument for further analysis.

Table 2

Cranach's Alpha Reliability Analysis of Study Variables.

S.N.	Variable	No. of Items	Cronbach's Alpha
1	Payment Security	5	0.77
2	Perceived Usefulness	5	0.78
3	Perceived Ease of Use	5	0.77
4	Perceived Credibility	5	0.79
5	Customer Attitude	5	0.75
6	Customer Satisfaction	5	0.79

Source: SPSS Output, 2025

Descriptive statistics.

Descriptive statistics for all constructs reveal that respondents expressed consistently positive perceptions across all measured variables, with mean scores generally ranging from 4.27 to 4.78 on a five-point scale.

Table 3

Summarizes the mean scores by construct.

Construct	No. of Items	Mean Range	Overall Impression
Payment Security (PS)	5	4.35 – 4.47	High trust in security measures
Perceived Usefulness (PU)	5	4.40 – 4.56	Strongly perceived as time-saving
Perceived Ease of Use (PEOU)	5	4.32 – 4.63	Rated as highly user-friendly
Perceived Credibility (PC)	5	4.27 – 4.69	Highly trusted and recommended
Customer Attitude (CA)	5	4.26 – 4.54	Positive and confident attitude
Customer Satisfaction (CS)	5	4.33 – 4.78	High overall satisfaction level

Source: Field Survey, 2025

Notable highlights include the highest individual mean score of 4.78 for the item 'I will continue using internet banking services in the future' (Customer Satisfaction), and 4.69 for 'Using internet banking is a good idea for modern banking' (Perceived Credibility), indicating exceptionally high levels of

continued usage intent and perceived appropriateness of digital banking among Nepalese users.

Inferential Statistics and Hypothesis Testing

Model summary

Table 4 presents the model summary for the multiple regression analysis. The correlation coefficient (R = 0.724) indicates a strong positive relationship between the independent variables and Customer Satisfaction. The R^2 value of 0.524 reveals that 52.4% of the variance in customer satisfaction is explained by the model predictors, with an Adjusted R^2 of 0.517 confirming model reliability and fit.

Table 4

Model Summary

Model	R	R Square	Adjusted R-Square	Std. Error of Estimate
1	0.724	0.524	0.517	0.28624

Predictors: (Constant), CA, PEU, PC, PS, PU | Source: SPSS Output, 2025

ANOVA

Table 5 confirms the statistical significance of the overall regression model. The F-value of 83.156 ($p < 0.001$) demonstrates that the independent variables collectively and significantly predict Customer Satisfaction.

Table 5

ANOVA Results

Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Regression	34.067	5	6.813	83.156	0.000
Residual	30.971	378	0.082		

Model	Sum of Squares	df	Mean Square	F	Sig.
Total	65.038	383			

Dependent Variable: CS | Source: SPSS Output, 2025

Regression Coefficients and Hypothesis Testing.

Table 6 presents the unstandardized and standardized regression coefficients, t-statistics, and significance values for each predictor. All VIF values are below 5.0, confirming the absence of serious multicollinearity.

Table 6

Regression Coefficients.

Predictor	B	Std. Error	Beta (β)	t	Sig.	VIF	Decision
(Constant)	1.193	0.166		7.187	0.000		
Payment Security (PS)	0.259	0.052	0.302	4.958	0.000	2.947	H2: Supported
Perceived Usefulness (PU)	0.029	0.059	0.031	0.491	0.623	3.258	H3: Not Supported
Perceived Ease of Use (PEOU)	0.208	0.055	0.229	3.799	0.000	2.884	H4: Supported
Perceived Credibility (PC)	0.152	0.055	0.160	2.752	0.006	2.677	H5: Supported
Customer Attitude (CA)	0.087	0.063	0.094	1.384	0.167	3.685	H6: Not Supported

Dependent Variable: CS | Source: SPSS Output, 2025

Payment Security was the most influential predictor ($\beta = 0.302$, $p < 0.001$), confirming H2. Perceived Ease of Use followed ($\beta = 0.229$, $p < 0.001$), confirming H4. Perceived Credibility had a smaller but significant positive effect ($\beta = 0.160$, $p = 0.006$), confirming H5. Perceived Usefulness ($\beta = 0.031$, $p = 0.623$) and Customer Attitude ($\beta = 0.094$, $p = 0.167$) were statistically insignificant, failing to support H3 and H6, respectively.

Discussion And Justification.

The findings of this study indicate that internet banking in Nepal is generally perceived positively by users across multiple dimensions, including usefulness, ease of use, credibility, and overall satisfaction. Customers reported high satisfaction, particularly due to convenience, efficiency, and accessibility—findings that align closely with prior work by Yamen (2023) and Zainordin et al. (2022), where perceived usefulness was identified as a key determinant of digital banking adoption and satisfaction.

The primacy of Payment Security ($\beta = 0.302$) as the strongest predictor is consistent with global evidence (Paudel & Kandel, 2025; Proctor, 2019) and contextually relevant for Nepal, where concerns around cybersecurity are rising with rapid digital adoption. Users who trust that their financial information is protected demonstrate significantly higher satisfaction, confirming that security infrastructure is fundamental to digital banking success.

Perceived Ease of Use ($\beta = 0.229$) emerged as the second most significant predictor, consistent with TAM (Davis, 1989) and numerous empirical studies (Rahi et al., 2017; Meuter et al., 2000). User-friendly interfaces, clear navigation, and intuitive transaction processes lower adoption barriers and encourage sustained engagement. The strong association between ease of use and satisfaction aligns with SST Theory, which posits that technologies enabling

independent, efficient service delivery improve customer experience (Curran & Meuter, 2005).

The positive but smaller effect of Perceived Credibility (β = 0.160) highlights that trust in the reliability and legitimacy of digital banking services also shapes satisfaction. This finding resonates with Ghimire et al. (2022) and Subedi and Tamang (2023), who emphasize credibility as essential for building customer loyalty in Nepalese digital banking.

The statistically insignificant effects of Perceived Usefulness and Customer Attitude contrast with global studies where these factors typically yield stronger effects (Davis, 1989; Venkatesh & Bala, 2008). This discrepancy may reflect contextual factors specific to Nepal, including varying levels of digital literacy, infrastructural constraints, limited exposure to advanced banking technologies, and lower baseline expectations among semi-urban users. These contextual nuances underscore the importance of geographically specific research and the limitations of directly generalizing global findings to developing-country contexts.

The overall model explained 52.4% of variance in customer satisfaction (R^2 = 0.524, Adjusted R^2 = 0.517), leaving 47.6% attributable to factors not captured in this model—such as service quality dimensions, network reliability, customer support responsiveness, and socio-cultural influences—which offer promising avenues for future research.

Conclusions

This study examined the impact of internet banking services adoption on customer satisfaction in Nepalese commercial banks in Bardiya District, focusing on Payment Security, Perceived Ease of Use, Perceived Credibility, Perceived Usefulness, and Customer Attitude as determinants. With a sample of 384 respondents and rigorous SPSS-based analysis, the study produced robust

empirical findings that advance understanding of digital banking satisfaction in a semi-urban Nepalese context.

The findings confirm that customers hold a highly positive view of internet banking, valuing its convenience, efficiency, and reliability. Payment Security emerged as the most critical determinant of satisfaction, followed by Perceived Ease of Use and Perceived Credibility—all of which were statistically significant predictors. Perceived Usefulness and Customer Attitude showed positive but insignificant effects, likely attributable to contextual factors including digital literacy gaps and infrastructural limitations in the study area.

The regression model demonstrated strong predictive validity ($R^2 = 0.524$, $F = 83.156$, $p < 0.001$), and high scores on the Customer Satisfaction scale—particularly the intent to continue using internet banking (mean = 4.78)—underscore the growing acceptance and reliance on digital financial platforms in Nepal. These results provide actionable insights for Nepalese commercial banks: prioritizing cybersecurity, developing intuitive and accessible platforms, and communicating service credibility transparently are essential strategies for enhancing customer satisfaction, driving broader digital adoption, and advancing financial inclusion across the country.

Recommendations

Banks should strengthen payment security through advanced cybersecurity measures and transparent communication to build trust. Improving user-friendly and intuitive interface design is essential to enhance accessibility for all users. Institutions should also ensure service credibility by maintaining clear data protection policies and efficient customer support. Collaboration with government agencies to promote digital literacy programs can reduce adoption barriers, especially in rural and semi-urban areas. Additionally, leveraging AI for personalized services can improve customer experience and satisfaction.

Overall, focusing on security, usability, and awareness will help expand internet banking adoption and promote financial inclusion.

Implications

The findings of this study carry significant theoretical, managerial, and policy implications. Theoretically, the integration of TAM, SST Theory, and Perceived Risk Theory provides a more comprehensive and contextually appropriate framework for understanding digital banking satisfaction in developing economies, addressing a notable gap in the existing literature.

Managerially, the study provides Nepalese commercial banks with evidence-based guidance to prioritize security infrastructure, user experience design, and credibility communication in their digital banking strategies. By understanding the differential impact of satisfaction drivers in semi-urban contexts, banks can allocate resources more effectively and design services that resonate with diverse customer segments.

From a policy perspective, the findings support the case for national digital literacy programs and investment in internet infrastructure in areas like Bardiya District. Nepal Rastra Bank and other regulatory bodies can leverage these insights to develop policies that encourage secure, inclusive, and accessible digital financial services, thereby advancing Nepal's broader financial inclusion agenda.

Future Research Directions

Future research should expand sample size and diversity by including participants from rural, semi-urban, and urban areas to improve the generalizability of findings. It should also incorporate additional variables such as service quality, mobile app design, network reliability, and digital literacy to provide a more comprehensive understanding of customer satisfaction. Longitudinal and mixed-method designs are recommended to track changes in

adoption behavior over time and to gain deeper insights through qualitative analysis. Comparative studies across different banks and regions can help identify best practices and understand variations in satisfaction drivers. Research should also focus on specific demographic groups, including elderly users and low-income populations, to support inclusive digital banking strategies. Finally, examining emerging technologies such as AI-driven services, blockchain-based security, and open banking frameworks can reveal their impact on customer satisfaction and adoption behaviors.

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