
Customer Perception towards Mobile Banking Services in Kathmandu District

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Abstract: *This study used quantitative methods to investigate how consumers perceive mobile banking services in the Kathmandu district. The research analyzed the impact of perceived ease of use, self-efficacy, perceived cost, trust, security, and perceived usefulness on the intention to use mobile banking services, surveying 213 participants. Data was collected through a self-structured questionnaire, and various statistical analyses, including descriptive statistics, correlation coefficients, regression analysis, and ANOVA, were employed to assess the relationships between intention to use mobile banking and the independent variables of perceived ease of use, self-efficacy, perceived cost, trust, security, and perceived usefulness. The data was processed using SPSS Statistical Package 25.*

Keywords: *Mobile Banking, Customer Perception, Perceived Usefulness.*

1. INTRODUCTION

The banking industry has embraced technology, focusing on digital services like mobile and internet banking for improved decision-making and customer service (Sapkota et al., 2018). Mobile banking, or m-banking, has become essential for success, enabling customers to manage accounts, conduct transactions, and trade stocks via mobile devices. It started in 1999, with Kenya pioneering text-based services (Shaikh & Karjaluoto, 2015). In Nepal, banks introduced credit cards, internet banking, ATM cards, and mobile banking for convenient digital payments. Empirical research shows customer intention to use mobile banking is influenced by Attitude towards Mobile Banking, Subjective Norms, and Perceived Behavioral Control. This study explores customer perceptions of mobile banking in the Kathmandu district.

This study focuses on the factors influencing the performance of bank personnel and attempts to address the following primary research questions:

- i. What are the factors that influence customers' perception of mobile banking?
- ii. What is the level of usage of mobile banking among customers?
- iii. What are the attitudes of customers towards mobile banking?
- iv. How do customers' perception of mobile banking influence their usage and attitudes towards it?

2. REVIEW OF LITERATURE

Customers can manage accounts, conduct transactions, and access services on the go via mobile applications or other channels (Karimov et al., 2019). Customer perception, as defined by Kotler and Keller (2006), is how customers interpret and assign meaning to their interactions with a company's products, services, and brand image, involving subjective assessments of quality, value, reliability, credibility, and image.

2.1 Model

2.1.1 Technology Acceptance Model

In 1989, Davis introduced the Technology Acceptance Model (TAM), built on the Theory of Reasoned Action (TRA). It centres on perceived usefulness (PU) and perceived ease of use (PEOU) as key factors in technology adoption.

2.1.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh et al. (2003) developed UTAUT model, extends prior theories with four key predictors: Effort Expectancy, Performance Expectancy, Facilitating Conditions, and Social Influence. In UTAUT, Performance Expectancy is akin to Perceived Usefulness in TAM, while Effort Expectancy relates to ease of use. Venkatesh et al. (2012) expanded UTAUT with hedonic motivation, price value, habit, and explored moderation by age, gender, voluntariness of use, and experience.

2.3 Conceptual Framework and Hypothesis

After reviewing the relevant literature, the researcher has developed a research model that integrates key constructs from both the UTAUT and TAM models, along with relevant items from previous studies, to examine customer perceptions of mobile banking services in the Kathmandu district.

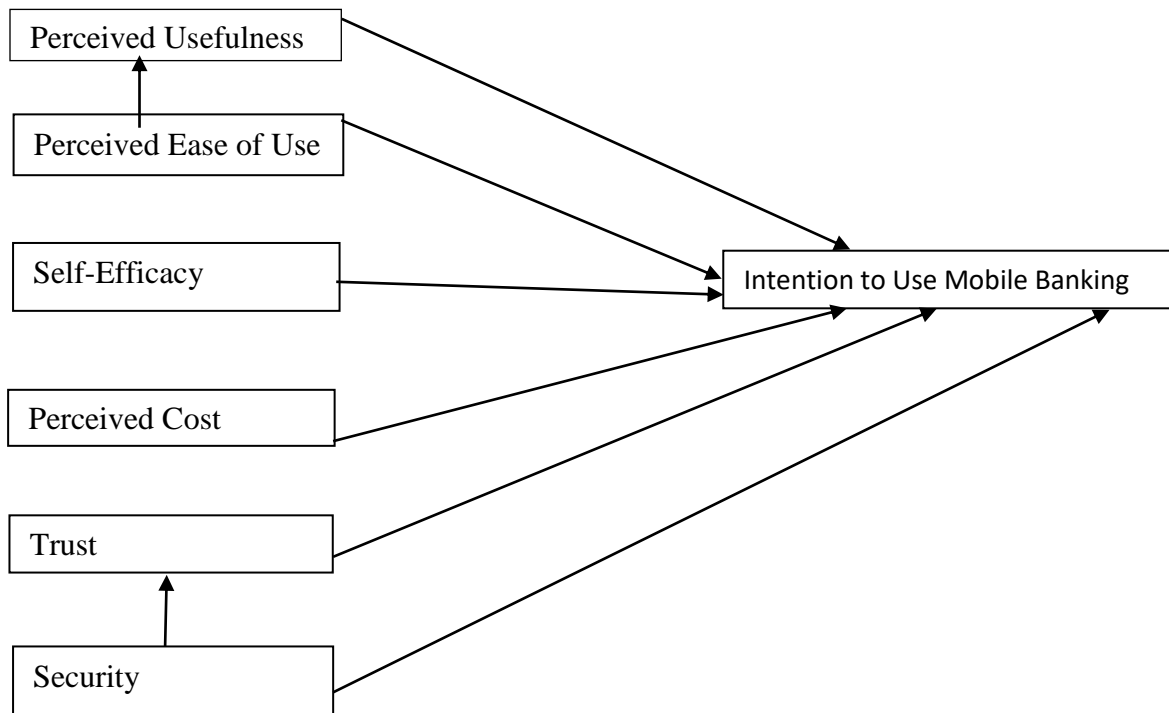


Fig 1: Conceptual Framework

Source: Adapted and modified from Singh, Srivastava, & Srivastava (2010)

Perceived Usefulness

Studies by Vora et al. (2020) and Gumelar et al. (2019) suggest that individuals tend to reject systems they find unhelpful for personal tasks. Previous research highlights the impact of perceived usefulness and ease of use on behavioral intention, and the direct influence of perceived usefulness on usage intention in mobile banking.

H₁: The adoption of M-banking is directly influenced by perceived usefulness.

Perceived Ease of Use

Alalwan, et al. (2017) has found that perceived ease of use was a significant predictor of mobile banking adoption among Jordanian bank customers. Individuals who have perceived mobile banking as an easy-to-use service are more likely to have adopted it.

H₂: The perception of ease of use positively impacts the intention to adopt and use mobile banking services.

To enhance adoption, it has been emphasized in previous research (Chitungo and Munongo, 2013; Mortimer et al., 2015; Koksai, 2016) that mobile banking technology should be designed to be user-friendly and easy to understand for customers. Based on this, the following hypothesis has been proposed:

H₃: The perception of ease of use positively influences the perception of usefulness in relation to mobile banking services.

Self-efficacy

Kusuma and Pujari (2020) have discovered that higher levels of self-efficacy among Indian consumers regarding their ability to use mobile banking has been a significant predictor of adoption.

H₄: Greater self-efficacy is positively associated with the intention to adopt and use mobile banking services.

Perceived Cost

Wang et al. (2016) have discovered that the intention to adopt mobile banking services was negatively associated with perceived cost. They have observed that customers were less inclined to adopt mobile banking services when they perceived the costs to be too high.

H₅: The perception of costs negatively impacts the intention to adopt and use mobile banking services.

Trust

Users' trust in mobile banking services has been influenced by their perceptions of the service provider's reputation, security, privacy, and reliability. Building and maintaining trust in mobile banking services have been essential for service providers to increase adoption and usage rates among their customers Khalifa and Shen (2016).

H₆: The level of trust that customers have in mobile banking positively influences their intention to adopt and use these services.

Security

Wei and Chen (2020) found that in China, security concerns significantly hinder mobile banking adoption. Customers who perceive mobile banking as secure are more likely to adopt and use these services, illustrating the link between perceived security and trust.

H₇: The level of trust that customers have in mobile banking positively influences their intention to adopt and use these services

Improved mobile security builds trust and promotes secure service adoption, enhancing mobile banking's value. Despite not being universally popular, technology advances drive increased usage, with growth potential in both urban and rural Indian markets. Urban areas have lower adoption due to security concerns, while rural areas show potential with limited alternatives and higher mobile phone use.

H₈: The perception of secure mobile transactions positively enhances customer trust in mobile banking services

3. RESEARCH METHODOLOGY

3.1 Research Design

The research design adopted in the present study has been descriptive. A quantitative research approach has been employed in this study, aiming to gather numerical data and generalize it across groups of people to explain a specific phenomenon. The descriptive research design has been developed with the purpose of studying the subject matter in detail by describing the facts and characteristics related to the research problem and sample.

3.2 Population and Sample

The study employed purposive sampling to select 200 respondents, specifically mobile banking users aged 20 to 40 in the Kathmandu district.

Table 1. Descriptive status of the Respondents

Variables	Classification Variables	N	Percent
Gender	Male	110	51.64
	Female	103	48.36
	Others	0	0
Age Group	20-25	77	36.15
	26-30	104	48.83
	31-35	25	11.74
	36-40	7	3.29
Marital Status	Married	82	38.5
	Single	130	61.03
	Others	1	0.47
Academic Qualification	Below High School	6	2.82
	10+2	39	18.31
	Bachelors	99	46.48
	Masters	69	32.39
	Phd or above	0	0
Occupation	Student	70	32.86
	Privately Employed	74	34.74
	Government Employed	22	10.33
	Self-employed	30	14.08
	Others	17	7.98
Monthly Income	Below Rs. 25000	90	42.25
	Rs. 25001-35000	58	27.23
	Rs.35001-50000	46	21.6
	Rs.50001-100000	19	8.92
Period of Using Mobile Banking	Less than 1 year	25	11.74
	1-3 years	72	33.8
	4-6 years	74	34.74
	More than 6 years	42	19.73

Source: Field Survey, 2023

3.3 Nature & Sources of Data and Data Collection Procedure

The study collected primary data via a questionnaire survey in the Kathmandu District, focusing on individuals aged 20 to 40 who are mobile banking users. It utilized quantitative data and included secondary data from various sources. The survey questions used multiple choice, options, and a Likert scale from 1 to 5.

3.5 Data Analysis Methods

Survey data was meticulously prepared, coded, and verified for accuracy before inputting into Microsoft Excel. Analysis was conducted using SPSS, incorporating descriptive statistics for data overview and inferential statistics for hypothesis testing with a 95 percent confidence level. Results were rigorously examined for precise conclusions. The regression model used in this study is as follows:

$$\hat{Y} = \alpha + \beta_1 * X_1 + \beta_2 * X_2 + \beta_3 * X_3 + \beta_4 * X_4 + \beta_5 * X_5 + \beta_6 * X_6 + e_i$$

Where:

- \hat{Y} = Intention to use mobile banking.
- α represents the intercept or constant term.
- X_1 = Perceived ease of use
- X_2 = Self-efficacy
- X_3 = Security
- X_4 = Perceived Cost
- X_5 = Perceived Usefulness
- X_6 = Trust
- e_i = Error Term

3.6 Reliability and Multi-collinearity

The reliability test was conducted via Cronbach's alpha to assess the consistency of the respondents' responses. Similarly, while checking for multi-collinearity between employee performances, a test between independent variables was performed to identify tolerance values and variance inflation factors (VIF) with the help of SPSS software shown in Table 2.

Table 2. Reliability and Multi-collinearity test of Variables

Variables	Cronbach's Alpha	Tolerance	VIF
Perceived ease of use	0.719	.466	2.145
Self-efficacy	0.696	.542	1.846
Perceived cost	0.615	.502	1.992
Security	0.684	.433	2.310
Trust	0.668	.437	2.289
Perceived usefulness	0.687	.618	1.617

Table 3 assesses the questionnaire's reliability in this study, with Cronbach's Alpha values for factors like perceived ease of use, self-efficacy, perceived cost, security, trust, and perceived usefulness ranging from 0.615 to 0.719. All of these values surpass the 0.6 threshold, confirming their reliability. Moreover, Variance Inflation Factors (VIF) for all variables are below 5, and tolerance values are above 0.2, indicating no significant issues with multi-collinearity, as per research standards (Kim, 2019).

4. RESULTS

4.1 Correlation Analysis

Table 4 shows how intention to use mobile banking services relates to independent variables like perceived ease of use, self-efficacy, perceived cost, security, trust and perceived usefulness.

Table 3. Correlation Analysis

Constructs	Perceived Ease of Use	Self - Efficacy	Perceived Cost	Security	Trust	Perceived Usefulness	Intention to Use Mobile Banking
Perceived Ease of Use	1						
Self-Efficacy	.622**	1					
Perceived Cost	.076	.312**	1				
Security	-.100	.118	.587**	1			
Trust	-.086	.110	.594**	.713**	1		
Perceived Usefulness	.551**	.414**	.289**	.014	.112	1	
Intention to Use Mobile Banking	.570**	.423**	.235**	-.072	-.061	.767**	1

**Correlation is significant at the 0.01 level (2-tailed)

Table 4 presents Pearson correlation coefficients between ITUMB and its independent factors. ITUMB is moderately positively correlated with PEOU (0.570) and SE (0.423) and weakly positively correlated with PC (0.235). It has weak negative correlations with S (-0.072) and T (-0.061). Notably, ITUMB has a strong positive correlation with PU (0.767).

4.2 Regression Analysis

The study was about customer perception towards mobile banking services in Kathmandu district. The independent variables were perceived ease of use, self-efficacy, perceived cost, security, trust, and perceived usefulness. Table 5 represents the regression analysis between the independent and dependent variables based on the data obtained from 213 respondents.

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	F	Sig.
1	.805	.649	.639	63.427	000.

Predictors: (Constant), Perceived ease of use, self-efficacy, perceived cost, security, trust, perceived usefulness

The value of F is 63.427, which is significant at 5%; it states that the model is fit. The value of the R square (0.649), presented in Table 5, infer that 64.9% of the difference in the dependent variable (i.e., intention to use mobile banking) is explained by the independent

variables (i.e., perceived ease of use, self-efficacy, perceived cost, security, trust, and perceived usefulness).

Table 5. Regression Coefficients

Model	Unstandardized Beta	Standard Error	Standardized Beta	t-statistics	Sig.	
1	(Constant)	.840	1.333		.630	.529
	PEOU	.237	.085	.168	2.777	.006
	SE	.039	.076	.029	.509	.611
	PC	.103	.038	.157	2.698	.008
	S	-.007	.037	-.013	-.201	.841
	T	-.126	.038	-.205	-3.288	.001
	PU	.658	.054	.640	12.189	.000

Table 5 shows regression analysis results. Perceived ease of use, perceived cost, and perceived usefulness are highly significant for intention to use mobile banking, while trust is not. Self-efficacy and security are also not significant. Therefore, the regression analysis results in the following equation:

$$\begin{aligned} \text{Intention to use mobile banking (ITUMB)} = & 0.840 + 0.168 \text{ Perceived Ease of Use} \\ & + 0.029 \text{ Self-efficacy} \\ & + 0.157 \text{ Perceived Cost} \\ & - 0.013 \text{ Security} \\ & - 0.205 \text{ Trust} \\ & + 0.640 \text{ Perceived Usefulness} \end{aligned}$$

4.3 Mediation Analysis (Sobel Test)

Relationship between Perceived Ease of Use (X), Perceived Usefulness (M), and ITUMB (Y)

Table 6. Model 4

Y	ITUMB
X	Perceived Ease of Use
M	Perceived Usefulness
Sample Size	213
Outcome	Perceived Usefulness

Total Effect Estimates, Standard Errors, T-values, and Significance Levels

Table 7. Total effect of X on Y

Effect	SE	T	P	LLCI	ULCI
.8041	.0799	10.0641	.0000	.6466	.9616

Direct Effect Estimates, Standard Errors, T-values, and Significance Levels



Table 8. Direct effect of X on Y

Effect	SE	T	P	LLCI	ULCI
.2978	.0721	4.1315	.0001	.1557	.4399

Indirect Effect Estimates and Bootstrap Confidence Intervals

Table 9. Indirect effect of X on Y

	Effect	Boot SE	Boot LLCI	Boot ULCI
PU	.5063	.0711	.3810	.6527

The total effect model reveals that the connection between PEOU and ITUMB is partially mediated by PU. The total effect of PEOU on ITUMB (including the indirect effect through PU) is significant (coefficient = 0.8041, $p < 0.001$), as is the direct effect of PEOU on ITUMB (coefficient = 0.2978, $p < 0.001$). The indirect effect of PEOU on ITUMB through PU is also significant (coefficient = 0.5063, $p < 0.001$). Overall, this suggests that both PEOU and PU are important predictors of intention to use mobile banking services, and their relationship is partly mediated by perceived usefulness.

Relationship between Security (X), Trust (M), and ITUMB (Y)

Table 10. Model 4

Y	ITUMB
X	Security
M	Trust
Sample Size	213
Outcome	Trust

Total Effect Estimates, Standard Errors, T-values, and Significance Levels

Table 11. Total effect of X on Y

Effect	SE	T	P	LLCI	ULCI
-.0424	.0407	-1.0420	.2986	-.1227	.0378

Direct Effect Estimates, Standard Errors, T-values, and Significance Levels

Table 12. Direct effect of X on Y

Effect	SE	T	P	LLCI	ULCI
-.0338	.0582	-.5811	.5618	-.1486	.0810

Indirect Effect Estimates and Bootstrap Confidence Intervals

Table 13. Indirect effect of X on Y

	Effect	Boot SE	Boot LLCI	Boot ULCI
T	-.0086	.0473	-.1108	.0762

The total effect model shows that Security is not a significant predictor of Intention to use mobile banking ($p = .2986$), with a negative coefficient of $-.0424$. Increasing Security does not significantly impact Intention to use mobile banking. The indirect effect of Security through Trust was also examined and found to be insignificant ($p = .8367$). In summary, Security is a substantial predictor of Trust but does not significantly predict Intention to use mobile banking, either directly or indirectly through Trust.

4.4 Hypothesis Testing

The analysis led to the following summary of the study's hypotheses:

Table 14. Hypotheses - Summary

Hypothesis	P-value	Remarks
H1: The perception of usefulness positively influences the intention to adopt and use mobile banking services.	0.000	Accepted
H2: The perception of ease of use positively impacts the intention to adopt and use mobile banking services.	0.000	Accepted
H3: The perception of ease of use positively influences the perception of usefulness in relation to mobile banking services.	0.000	Accepted
H4: Greater self-efficacy is positively associated with the intention to adopt and use mobile banking services.	0.000	Accepted
H5: The perception of costs negatively impacts the intention to adopt and use mobile banking services.	0.001	Accepted
H6: The level of trust that customers have in mobile banking positively influences their intention to adopt and use these services.	0.376	Rejected
H7: The perception of secure transactions positively impacts the intention to adopt and use mobile banking services.	0.299	Rejected
H8: The perception of secure mobile transactions positively enhances customer trust in mobile banking services.	0.000	Accepted

5. DISCUSSIONS

The study applied social psychology theories (TAM, TRA, TPB, UTAUT) to examine mobile banking adoption, revealing convenience, security concerns, and moderate trust. Primary predictors for usage intention include perceived usefulness, perceived cost, and trust. Perceived ease of use positively impacts intention, and trust is influenced by security. This insight can enhance adoption strategies and user experiences.

The study explored the association between perceived usefulness and the intention to use mobile banking, revealing a significantly positive influence. This finding aligns with prior research conducted by Subedi (2021), Rehman et al. (2020), Tamilselvi and Balaji (2019), Myra V. De Leon (2019), Tam and Oliveira (2018), Nazrul Islam (2018), Abdinoor and Mbamba (2017), Rajaram and Vinay (2017), Govender and Sihlali (2014), Pavithran et al.

(2014), Kabir (2013), Gupta (2013), Husein and Sadi (2013), Hanafizadeh et al. (2011), Dasgupta et al. (2011), Wessels and Drennan (2010), and Petrova (2002).

The study investigated the correlation between perceived ease of use and the intention to use mobile banking, and it identified a significantly positive impact. This result aligns with previous research by Subedi (2021), Rehman et al. (2020), Tamilselvi and Balaji (2019), Myra V. De Leon (2019), Tam and Oliveira (2018), Nazrul Islam (2018), Abdinoor and Mbamba (2017), Rajaram and Vinay (2017), Govender and Sihlali (2014), Kabir (2013), Gupta (2013), Husein and Sadi (2013), Hanafizadeh et al. (2011), Dasgupta et al. (2011), and Wessels and Drennan (2010).

The study explored the positive impact of perceived ease-of-use on perception of usefulness in mobile banking services, revealing a statistically significant relationship consistent with Raza et al. (2017).

Likewise, the research explored how higher levels of self-efficacy are positively linked to the intention to embrace and utilize mobile banking services, and this connection is statistically significant. This outcome corresponds with a prior study conducted by (Myra V. De Leon 2019).

The study investigated the association between the perception of cost and the intention to utilize mobile banking services, revealing a statistically significant negative impact. This finding aligns with earlier research by Subedi (2021), Rehman et al. (2020), and Dasgupta et al. (2011). Interestingly, it contradicts the results of previous studies conducted by Tam and Oliveira (2018) and Nazrul Islam (2018).

The study explored the relationship between customer trust in mobile banking and their intention to use these services, finding no significant link. This aligns with Subedi (2021) and Rehman et al. (2020) but contradicts earlier studies by De Leon (2019), Tam and Oliveira (2018), Islam (2018), Abdinoor and Mbamba (2017), Rajaram and Vinay (2017), Govender and Sihlali (2014), Husein and Sadi (2013), Hanafizadeh et al. (2011), and Dasgupta et al. (2011).

The study explored the link between the perception of secure transactions and the intention to use mobile banking, finding no significant impact. This outcome aligns with previous research by Pavithran et al. (2014), Kabir (2013), and Husein and Sadi (2013). However, it contradicts the results of earlier studies by Subedi (2021), Govender and Sihlali (2014), Petrova (2002), and Drexelius and Herzig (2001).

Finally, the study explored the connection between the perception of secure mobile transactions and customer trust in mobile banking services, revealing a significantly positive impact. This outcome is consistent with prior research conducted by Subedi (2021), Rehman et al. (2020), Tamilselvi & Balaji (2019), Myra V. De Leon (2019), Tam & Oliveira (2018), Nazrul Islam (2018), Abdinoor & Mbamba (2017), Rajaram & Vinay (2017), Govender & Sihlali (2014), Pavithran et al. (2014), Kabir (2013), Gupta (2013), Husein & Sadi (2013), Hanafizadeh et al. (2011), Dasgupta et al. (2011), Wessels & Drennan (2010), and Petrova (2002).

6. CONCLUSIONS

The study investigated mobile banking perceptions in Kathmandu, revealing a demographic profile of typically 20-30-year-old, educated individuals with lower income. The regression model was significant, explaining a substantial portion of data variance. All predictors (perceived usefulness, security, self-efficacy, perceived cost, perceived ease of use, trust) significantly influenced mobile banking intention, explaining 64.9 percent of it. However, trust and security didn't significantly affect intention, confirming or contradicting relationships from prior research.

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