

## **Customer Satisfaction of Service Quality: Assessing Mobile Banking Practices**

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### **Abstract**

*This study aims to examine the impact of mobile banking service quality on customer satisfaction. The research seeks to determine whether improvements in service quality lead to higher levels of customer satisfaction. Data for this study were collected through a descriptive research approach, using a structured questionnaire with close-ended questions. The survey was conducted among mobile banking users in Kapilvastu, Nepal. The statistical analysis involved employing the Chi-square test to identify associations between variables and the Mann-Whitney U test to explore the relationship of independent variables with satisfaction categories (i.e., satisfied and unsatisfied). Notably, each relationship between the variables was found to be statistically significant. The findings of this paper demonstrate that in the context of Nepal, customers indeed experience increased satisfaction with mobile banking services. In addition to creating new value for both users and providers, the digital transformation in the banking sector also raises important questions about how practices are transformed in response to these advancements. This study sheds light on the satisfaction levels of customers using mobile banking services in the Nepalese context, highlighting the positive impact of these services on customer satisfaction.*

**Keywords:** Mobile Banking, Satisfaction, Service Quality, Technology

### **1. Introduction**

In today's business landscape, companies are increasingly recognizing the importance of integrating information technology to stay competitive in the global markets (Oliveira et al., 2014). The infusion of technology into regular business practices has become a prevailing trend, and the banking sector is no exception. Not only in developed countries and industries but also in developing nations, there is a strong drive to leverage information communication and technology to reap its benefits (Patel & Patel, 2018). With the advancement of information and communication technology, banks are actively moving their

customers towards self-service channels, such as ATMs, internet banking, and more recently, mobile banking services (Thakur, 2016).

Mobile banking empowers customers with the convenience of banking anytime and anywhere through self-service technology. Financial institutions, especially banks, have been early adopters of innovative technologies like mobile banking (Laukkanen, 2016). Compared to traditional physical and online banking, mobile banking offers increased convenience, flexibility, and mobility (Laukkanen, 2016). It plays a crucial role in reducing paperwork, cutting down waiting times in queues, and minimizing human errors during transactions (Park & Kim, 2020).

Although e-banking is a relatively new concept in Nepal, significant strides have been taken to embrace it. The introduction of credit cards by Nabil Bank Limited in 1990 marked the beginning of e-banking, followed by Himalayan Bank launching the first ATM in 1995 AD (Banstola, 2007). Subsequently, Kumari Bank introduced internet banking in 2002, and Laxmi Bank rolled out mobile banking services in 2004 (Banstola, 2007). However, the adoption of e-banking has not been without challenges. Customers' trust, privacy, and security concerns have emerged as significant barriers to the widespread acceptance of e-banking services (Daniel, 1999; Khorshid & Ghane, 2009). Despite these challenges, e-banking offers numerous advantages, such as convenience, time-saving, comfort, easy access, and quick access to information (Khan & Uwemi, 2018). Recognizing the potential benefits, Nepal Rastra Bank has placed strong emphasis on digitizing financial transactions through the Digital Nepal framework 2019, with a focus on a digitally empowered economy and financial inclusion (NRB Monetary Policy 2077/78; Digital Framework Nepal 2019).

The research problem in this context addresses the existing knowledge gap regarding customer satisfaction and loyalty in e-banking. While several studies have utilized the SERVQUAL model to assess customer satisfaction and loyalty in internet banking services, this research endeavors to identify different service quality determinants with support from existing literature. Given the government's commitment to digitization and financial inclusion, this study seeks to provide valuable insights to policymakers and e-banking practitioners on the customers' reception towards these digital initiatives.

The objectives of this research are two-fold. Firstly, it aims to examine the role of various service quality determinants, such as perceived usefulness, perceived ease of use, customer service, and trust, in influencing customer satisfaction. Secondly, the study seeks to explore the association between customer satisfaction and loyalty towards mobile banking. By achieving these objectives, the research aims to shed light on the satisfaction levels of mobile

banking users and the factors influencing their satisfaction.

## 2. Literature Review

Mobile phone banking, also known as mobile banking or m-banking, has emerged as a transformative force in the financial services industry. The increasing penetration of smartphones and advancements in mobile technology have contributed to the rising popularity of mobile banking among consumers and financial institutions alike. This literature review aims to explore the practice of mobile phone banking, its benefits, and the potential pitfalls that need to be addressed for its successful implementation. **Benefits of Mobile Phone Banking.** Numerous studies have highlighted the convenience and accessibility of mobile phone banking for customers (Mols et al., 2018; Yu & Fang, 2019). Mobile banking allows users to access their accounts, transfer funds, pay bills, and perform various financial transactions from the comfort of their smartphones, eliminating the need to visit physical bank branches. Mobile phone banking has the potential to promote financial inclusion by extending banking services to previously unbanked and underbanked populations (Dey et al., 2019; Mukherjee & Nath, 2020). By leveraging mobile technology, financial institutions can reach individuals in remote and underserved areas, providing them with access to formal banking services. **Cost-Effectiveness:** Studies have shown that mobile phone banking offers cost-effective solutions for both customers and financial institutions (Sharma & Bansal, 2017; Ahmad & Hafeez, 2019). Mobile transactions are generally more affordable than traditional banking methods, as they reduce the need for physical infrastructure and manual processing. **Enhanced Customer Experience:** Mobile phone banking provides a personalized and seamless customer experience, allowing financial institutions to tailor services based on individual preferences (Dutta & Bala, 2019). This level of customization can lead to increased customer satisfaction and loyalty.

Mobile phone banking introduces potential cybersecurity risks, including data breaches, identity theft, and fraudulent activities (Anderl & Colic, 2018; Ibrahim et al., 2021). Hackers and cybercriminals constantly evolve their tactics to exploit vulnerabilities in mobile banking applications, posing a significant threat to user data and financial assets. **Digital Literacy and Awareness:** The successful adoption of mobile phone banking requires a certain level of digital literacy and awareness among users (Gul & Khattak, 2018; Zulkarnain et al., 2019). Many individuals, especially in developing regions, may lack the necessary skills to navigate mobile banking applications and may be unaware of potential risks and security measures. **Network Connectivity and Infrastructure:** Mobile phone banking heavily relies on reliable network

connectivity and infrastructure (Nipa et al., 2017; Aburime & Nzekwe, 2021). In regions with poor network coverage or limited access to high-speed internet, the effectiveness and usability of mobile banking services may be compromised. Trust and Privacy Concerns: Trust and privacy concerns are significant deterrents to mobile phone banking adoption (Salman & Rehman, 2019; Bannai & Bannai, 2020).

Digitalization plays a crucial role in shaping modern banking practices, as highlighted by Kolmykova et al. (2022). The widespread adoption of smartphones and the easy availability of 3G and 4G networks have triggered significant transformations in the banking industry, resulting in more sophisticated banking consumers. However, this shift has also necessitated a reevaluation of the quality of financial services, as pointed out by Kumar et al. (2010). Moreover, as the digitalization process unfolds, the factors defining service quality are undergoing changes (Saha & Mukherjee, 2022). With the advancements in technology, service quality is now gauged in terms of e-service quality, with credit given to smartphones for driving the growth of e-banking. This has enabled customers to access mobile banking and internet banking, providing the convenience of banking anytime and anywhere (Menon, 2016). E-service quality has become a focal point of observation and study in the banking sector (Ighomereho et al., 2022). Santos (2003) has described e-service quality as the overall evaluation and judgment of e-service delivery, aiming for excellence and up-to-date service delivery through technology. E-service quality can be classified into two groups: internet purchasers and internet non-purchasers (Wang & Barnes, 2007). The emergence of mobile banking as a disruptive management tool within the mobile eco-system has brought significant benefits to traditional customers in terms of time and cost-saving, making transactions more efficient and user-friendly (Malaquias & Hwang, 2016). This comparison between mobile banking and conventional banking practices emphasizes the need to adapt service delivery strategies within the evolving mobile ecosystem, as argued by Albashrawi et al. (2019).

Trust assumes a critical role in defining the relationship between individuals and society and has a profound impact on customer behavior (Liu et al., 2019; Nguyen & Wang, 2020). This research endeavors to explore the role of trust in service quality and its consequent effect on satisfaction in e-banking through mobile banking platforms. Existing research has consistently demonstrated the positive influence of trust on customer behavior (Geebren et al., 2021). To delve deeper, trust is categorized into three key areas: personality-based trust, institutional-based trust, and interpersonal-based trust (McKnight et al., 2002).

Perceived usefulness, as defined by Davis (1989) and Dwivedi et

al. (2017), refers to an individual's belief that using a specific system will enhance their job performance. It serves as a predictor of customer satisfaction with mobile banking practices. When customers perceive mobile banking as beneficial in terms of time-saving and increased efficiency, they are more likely to embrace the technology and derive satisfaction from it (Owusu et al., 2021). Additionally, e-service quality independently influences perceptions, attitudes, satisfaction, and user behavior (Oni et al., 2016). Customer satisfaction is closely intertwined with how well products and services meet customer expectations. Mishra et al. (2017) define customer satisfaction as the emotional response customers have towards the performance of products or services based on their experiences. The SQCS model developed by Parasuraman et al. (1985) explores the correlation between service quality and customer satisfaction. Furthermore, customer satisfaction plays a significant role in determining customers' repurchase intentions (Kaura et al., 2015). As has been shown earlier, in Nepalese context, researches on mobile banking and consumer satisfaction is an under-researched area.

### **3. Methods**

**Research Design:** To examine customer satisfaction among mobile banking users, the researcher utilized a primary data collection method through a closed-ended questionnaire survey conducted in various cities (Jeetpur, Chandrauta, Taulihawa, and Gorusinge) within the Kapilvastu district of Nepal. The research design employed was descriptive, under a quantitative approach. Out of the 400 questionnaires distributed, 320 were returned, and after excluding 6 questionnaires with missing responses, the data from 316 respondents were included in this study. The questionnaire comprised two sections: the first section collected demographic information, and the second section included items related to the variables. A 5-point Likert scale (ranging from "strongly disagree" to "strongly agree") was utilized in the second section.

**Research Framework:** The research encompasses four independent variables, one mediating variable, and one dependent variable. The independent variables are perceived usefulness, perceived ease of use, customer service, and trust, while customer satisfaction acts as the mediating variable between the independent variables and loyalty. This study delves into the relationships between selected service quality determinants, customer satisfaction, and customer loyalty. The variable of customer service was adapted from the work of Hareli and Rafaeli (2008). Trust, perceived usefulness, and perceived ease of use were based on the Technology Acceptance Model (TAM) proposed by Davis (1989). Customer satisfaction and customer loyalty were inspired by the research of Amin (2016).

Instruments: Items related to all variables were sourced from reliable literature. To gauge the loyalty of mobile banking users, five items were adapted from Amin (2016) and Thakur (2014). Customer service was measured using four items from Thakur (2014), and two items were employed to measure customer satisfaction. The remaining four items for customer satisfaction were self-developed with the support of literature. For perceived usefulness and perceived ease of use, a questionnaire from the TAM model by Jahangir and Begum (2008) was utilized. To measure trust, items were collected from Amin (2016) and Jahangir and Begum (2008).

Data Analysis: Demographic information of the respondents included six categories: age, gender, marital status, academic qualification, income, and occupation. The largest proportion of respondents (74.4%) fell within the age group of 21 to 30 years. Male respondents were more prevalent, accounting for 65.2% of the sample. Marital status was almost evenly split between married and unmarried respondents. The academic qualification of the respondents was categorized into four groups, with over 86% having bachelor's degrees, master's degrees, or higher qualifications. In terms of income level, 60% of the respondents had a monthly income below thirty thousand. The data revealed that mobile banking is more accessible to educated individuals. To analyze the relationship between variables using the collected data, two inferential tests were employed. The chi-square test was used to explore the association between dependent and independent variables and to identify significant relationships between variables and customer satisfaction, which served as the test variable in this research.

#### Chi-square test of independent variables and dependent variable

Perceived ease of use and customer satisfaction			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	269.013 <sup>a</sup>	28	.000
Likelihood Ratio	99.645	28	.000
Linear-by-Linear Association	39.535	1	.000
Perceived usefulness and customer satisfaction			
Pearson Chi-Square	333.418 <sup>a</sup>	28	.000
Likelihood Ratio	114.471	28	.000
Linear-by-Linear Association	56.296	1	.000
Customer service and customer satisfaction			
Pearson Chi-Square	348.416 <sup>a</sup>	49	.000
Likelihood Ratio	177.527	49	.000

Linear-by-Linear Association	95.543	1	.000
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## Trust and customer satisfaction

Pearson Chi-Square	738.894 <sup>a</sup>	49	.000
Likelihood Ratio	202.096	49	.000
Linear-by-Linear Association	125.240	1	.000
N of Valid Cases	316		

Chi-square (28, N=316) = 269.013, P-value <0.01 this value tells that there is a statistically significant association between ease of use and satisfaction of customers. P-value= 0.000,  $\alpha$ -value = 0.05. Here, the p-value is less than the  $\alpha$ -value. It means an alternative hypothesis is accepted i.e.,: and there is a significant association between ease of use and customer satisfaction. For perceived usefulness and customer satisfaction, Chi-square (28, N=316) = 333.418, P-value <0.01 this value tells that there is a statistically significant association between the variables. P-value= 0.000,  $\alpha$ -value = 0.05. Here, the p-value is less than the  $\alpha$ -value. So, an alternative hypothesis is accepted i.e., : there is also a significant association between usefulness and customer satisfaction. For customer service and satisfaction, Chi-square (49, N=316) = 348.416, P-value <0.01 this value tells that there is a statistically significant association between the variables. P-value= 0.000,  $\alpha$ -value = 0.05. Here, the p-value is less than the  $\alpha$ -value. So, an alternative hypothesis is accepted i.e., : there is a significant association between customer service and customer satisfaction. And, for trust and customer satisfaction, Chi-square (49, N=316) = 738.894, P-value <0.01 this value tells that there is a statistically significant association between the variables. P-value= 0.000,  $\alpha$ -value = 0.05. Here, the p-value is less than the  $\alpha$ -value. So, an alternative hypothesis is accepted i.e., : there is a significant association between customer service and customer satisfaction.

The Mann-Whitney U Test between independent variables and categories of Satisfaction:

Table 2

*The rank of unsatisfied and satisfied*

		N	Mean Rank	
Ease of use		293	161.66	
		23	118.20	

Usefulness	Satisfied	293		47585.50
	Unsatisfied	23		2500.50
Customer Service	Satisfied	293		48244.50
	Unsatisfied	23		1841.50
Trust	Satisfied	293		48135.50
	Unsatisfied	23		1950.50
	Total	316		

The two ranks are formed in satisfaction of customers named as satisfied and unsatisfied rank 1 and 2. Total of 316 observations are categorized into two ranks. Where the satisfaction category unsatisfied has only 23 observations whose total sum of ranks is 2718.50. As the next category of satisfaction satisfied has 293 observations and its total sum of ranks is 47367 for ease of use. This results in a mean rank of 118.20 and 161.66. With this statistic, it can be said that the satisfaction category satisfied has a far larger mean rank than the next category unsatisfied. For perceived usefulness, the unsatisfied category has a total sum of ranks is 2500.50, and the satisfied has 293 observations and a total sum of ranks is 47585.50. This results in a mean rank of 108.72 and 162.41. With this statistic, it can be said that the satisfaction category satisfied has a far larger mean rank than the next category unsatisfied. For customer service, the unsatisfied category has a total sum of ranks is 1841.50. As the next category of satisfaction satisfied has 293 observations and its total sum of ranks is 48244.50. This results in a mean rank of 80.07 and 164.66. With this statistic, it can be said that the satisfaction category satisfied has a far larger mean rank than the next category unsatisfied. And, for the trust variable unsatisfied category has a total sum of ranks is 1950.50. As the next category of satisfaction satisfied has 293 observations and its total sum of ranks is 48135.50. This results in a mean rank of 84.40 and 164.28. With this statistic, it can be said that the satisfaction category satisfied has a far larger mean rank than the next category unsatisfied.

Table 3

Test statistics of independent variables and satisfaction

	Ease of use	Usefulness	Customer Service	Trust
Mann-Whitney U	2442.500	2224.500	1565.500	1674.500
Wilcoxon W	2718.500	2500.500	1841.500	1950.500



Z	-2.822	-3.366	-4.712	-4.976
Asymp. Sig. (2-tailed)	.005	.001	.000	.000

For perceived ease of use and satisfaction

The Mann-Whitney U statistic needs to consider the sums of the ranks and compare them with what we would expect if these two groups came from the same distribution. We consider each group in turn and work out for each group a U statistic. Here, U1 is less than U2

H1: There is a statistically significant difference between the median efficiency of e-banking with the median of satisfied and unsatisfied customers.

Here we see that the p-value is quoted next to Asymp. Sig. (2-tailed), is .005 (reported as  $p < .05$ ) which is less than 0.05 ( $\alpha$ -value). Hence, the null hypothesis cannot be accepted as a result alternative hypothesis is accepted. A statistically significant difference was found ( $U = 2442.5$ ,  $p < 0.05$ ). This result indicates that ease of use causes more satisfaction in customers.

For perceived usefulness and satisfaction

The Mann-Whitney U statistic needs to consider the sums of the ranks and compare them with what we would expect if these two groups came from the same distribution. We consider each group in turn and work out for each group a U statistic. Here, U1 is less than U2

H2: There is a statistically significant difference between the median usefulness of e-banking with the median of satisfied and unsatisfied customers.

Here we see that the p-value is quoted next to Asymp. Sig. (2-tailed), is .001 (reported as  $p < .05$ ) which is less than 0.05 ( $\alpha$ -value). Hence, the null hypothesis cannot be accepted as a result alternative hypothesis is accepted. A statistically significant difference was found ( $U = 2224.5$ ,  $p < 0.05$ ). This result indicates that usefulness causes more satisfaction in customers.

For customer service and satisfaction

The Mann-Whitney U statistic needs to consider the sums of the ranks and compare them with what we would expect if these two groups came from the same distribution. We consider each group in turn and work out for each group a U statistic. Here, U1 is less than U2

H3: There is a statistically significant difference between the median customer service of m-banking with the median of satisfied and unsatisfied customers.

Here we see that the p-value is quoted next to Asymp. Sig. (2-tailed), is .000 (reported as  $p < .05$ ) which is less than 0.05 ( $\alpha$ -value). Hence, the null hypothesis cannot be accepted as a result alternative hypothesis is accepted. A statistically significant difference was found ( $U = 1565.5$ ,  $p < 0.05$ ). This result indicates that customer service causes more satisfaction in customers.

For trust and satisfaction

The Mann-Whitney U statistic needs to consider the sums of the ranks and compare them with what we would expect if these two groups came from the same distribution. We consider each group in turn and work out for each group a U statistic. Here,  $U_1$  is less than  $U_2$

H4: *There is a statistically significant difference between the median trust of e-banking with the median of satisfied and unsatisfied customers.*

Here we see that the p-value is quoted next to Asymp. Sig. (2-tailed), is .001 (reported as  $p < .05$ ) which is less than 0.05 ( $\alpha$ -value). Hence, the null hypothesis cannot be accepted as a result alternative hypothesis is accepted. A statistically significant difference was found ( $U = 1674.5$ ,  $p < 0.05$ ). This result indicates that trust causes more satisfaction in customers.

#### **4. Discussion and Conclusions**

The main objective of this study was to explore the relationship between service quality and customer satisfaction. To measure customer satisfaction, four variables were considered: perceived usefulness, perceived ease of use, customer service, and trust. Loyalty of m-banking customers was assessed based on their satisfaction levels. Five distinct hypotheses were formulated to investigate the connections between these variables.

Hypotheses 1 and 2 focused on examining the association between perceived usefulness and perceived ease of use with customer satisfaction, drawing from Davis' TAM model (1989). Previous research (Jahangir & Begum, 2008) also indicated a significant relationship between these variables and customer satisfaction. Consistent with these findings, the results of this study revealed similar impacts of perceived usefulness and perceived ease of use on customer satisfaction.

Hypothesis 3 aimed to explore the relationship between customer service and satisfaction. Several studies have highlighted the significant influence of customer service on customer satisfaction. For instance, Carlson and O'Cass (2011) found a notable connection between customer service quality and m-banking user satisfaction. In line with these findings, this research study also established a significant relationship between customer service and customer satisfaction. In the context of internet banking, customer service encompasses

the role of managers or employees in providing information to customers (Bressolles et al., 2014). The alternative hypothesis was supported, confirming a significant association between customer service and customer satisfaction. Hypothesis 4 was designed to test the relationship between trust and customer satisfaction. The analysis of data indicated a significant relationship between trust and satisfaction. Previous research (Wang & Barnes, 2007) defined trust in terms of security and privacy and revealed a positive relationship with customer satisfaction. Similarly, in a similar context, Yu et al. (2015) identified trust as a predictor of customer satisfaction in e-banking. Aligning with these prior studies, this research study also confirmed the relationship between trust and satisfaction. The alternative hypothesis was supported, indicating a significant association between trust and satisfaction.

**Implications:** This research study makes valuable contributions both theoretically and practically. By integrating various models and drawing upon robust literature, the study provides valuable insights into the service, satisfaction, and loyalty of m-banking users. Two variables cited from Davis' TAM model primarily measured customer satisfaction concerning ease of availability and perceived usefulness to customers (Tan et al., 2010). Additionally, incorporating trust as a variable in this research enhances its practical relevance, as trust plays a crucial role in the early stages of technology adoption (Hsu et al., 2011). Thus, including trust as a variable in this study adds to its practical significance.

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