

## Assessing the Effectiveness of Mobile Banking Services Offered by Co-operatives in Nepal

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#### KEYWORDS

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#### ABSTRACT

Mobile banking plays a vital role in daily transactions and overall performance of any financial institutions. The objective of this study is to assess the utilization and effectiveness of mobile banking services provided by financial cooperative. Descriptive research design was applied by adopting a survey method to collect data. Out of 11 financial cooperatives providing mobile banking, two cooperatives Hatemalo and Upayogi Sahasrabdi Saccos were selected under a random sampling method. Out of 1371 members using mobile banking, 310 were selected for the study as respondents through a purposive sampling method. Questionnaire has been administered with five points Likert scale ranging from strongly disagree (1) to strongly agree (5). The results show that utilization of mobile service was less than average and effectiveness of mobile banking was moderately high (4). Satisfaction level between genders was the same (4) but older age group and low education level had lower satisfaction level. It is concluded that cooperatives should organize broad member education and mobile banking training campaign to increase mobile banking service utilization. It is also suggested to the curriculum development of Nepal to introduce mobile banking subjects at secondary school levels.

### 1. INTRODUCTION

Mobile banking (or m-banking) is an online banking which is an application of mobile commerce based on wireless networks and mobile devices (Sadiku, Tembely, & Musa, 2017). Short Messaging Service (SMS) Banking was the initial iteration of mobile banking that was developed in the early 1990s (Gathu & Njenga, 2021).

Mobile banking can be considered a subcategory of online banking. The *Haat Haat ma Mobile, Ghar Ghar ma Internet* campaign was introduced shortly after People's Movement II (Mobile in every hand, Internet in every house) (Regmi, 2015). In Nepal's communication wave, there are two main active telecommunication networks. In the context of Nepal, Nepal Telecom and Ncell have a significant impact

on the growth of the telecom industry (Regmi, 2015).

Banks and financial institutions (BFIs) are offering numerous sorts of digital banking services as information and communication technology progress (Pradhan & Dahal, 2021). There are services available like adding money to digital wallets, paying service fees and bills to various offices, paying taxes and government income, getting a checkbook or an ATM card, etc. (Adhikari, 2022).

Although small transactions have been made using mobile devices in Nepal since 2004 itself, Laxmi Bank was the first to offer mobile banking with its product, "Mobile Khata" (Dhungel & Khatri, 2013). To give an overview of technical services available in Nepal, more people own mobile phones than cooperative accounts (Richter, 2023). Security, responsiveness and convenience feature of the mobile banking services make the customer satisfy in using mobile banking services (Thakuri, Dhakal, Danuwar, Baral, & Koirala, 2023).

Though majority of Nepalese banks have recognized the importance of understanding customer psychology and are highly conscious of it (Thakuri, Dhakal, Danuwar, Baral, & Koirala, 2023), the effectiveness of m-banking on Nepalese cooperatives have not been thoroughly studied. Thus, this research aims to identify the following issues regarding cooperative members' satisfaction.

- What is the satisfaction level of m-banking among cooperative members?
- What is the utilization status of mobile banking among cooperative members?

The research has used attribution of m-banking to identify coop members' satisfaction develop in SERVQUAL which is a multi-item scale developed to assess customer perceptions of service quality in service and retail businesses (Parasuraman, Zeithaml, & Berry, 1988). Attributes of M-banking comprised accessibility, reliability, convenience and privacy or security in the study.

## 1.1 CONCEPTUAL FRAMEWORK

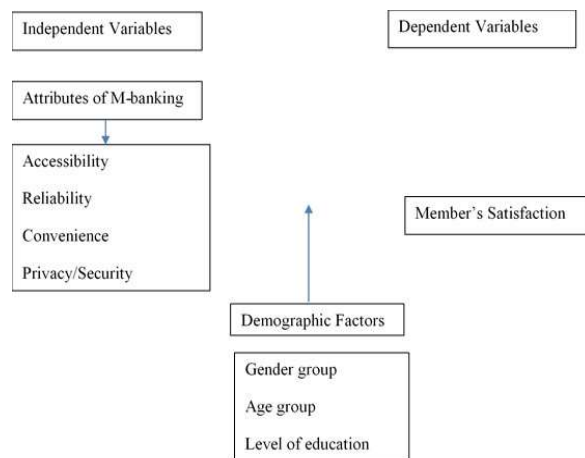


Figure 1: Conceptual Framework

The study involves gender group, age group, and level of education as mediating variable on the identification of members' satisfaction on m-banking.

## 1.2 HYPOTHESIS

The research study consists the following null hypothesis:

Ho: There is no significant difference at the level of satisfaction among cooperative members' regarding attributes of m-banking.

## 2. MATERIALS AND METHOD USED

The research paper applies a descriptive research design and survey research method to collect respondents' responses. For the collection of primary data, a set of questionnaires were prepared and distributed within the members of cooperatives to evaluate member's awareness, knowledge and its impact on members satisfaction, two co-operatives were chosen on the basis simple random sampling technique. A survey was conducted to collect data from cooperative members from those two sampled cooperatives using purposive sampling technique. The sample for the study was collected using structured questionnaire with the help of printed form and sample size was 310 which was calculated by applying Yamane's formula to determine sample size. The formula is  $n = N / (1 + N(e)^2)$

(Yamane, 1967). The target population for this study included all the customers using mobile banking of co-operatives in Hetauda. Samples were collected from the different sub-groups and they were the customers of different 2 co-operatives, namely Hatemalo and Upayogi. There were total 98 saving and credit co-operatives in Makwanpur; however, the study was targeted to co-operative using mobile banking and there

were 11 co-operatives using mobile banking (Source: Hetauda Submetropolitan City Office) out of which two co-operatives are selected under random sampling by applying lottery method. Moreover, sample of customers were from the different age groups, educational background and gender. In the survey, all respondents had to respond through filled questionnaire.

Table 1: Calculation

Co-operative's	Calculation	No. of Respondent
Hatemalo Saving and Credit Co-operative Society Limited.	310	=310*821/1371 186
Upayogi Sahasrabdi Bachat Tatha Rin Sahakari Sanstha limited	310	=310*550/1371 124
Total		310

This study was supported with the statistical tools such, median, and mode for level of satisfaction, and Kruskal-Wallis and Mann-Whitney U Test to test the hypothesis.

Satisfaction level is determined on the basis of access, reliability, convenience, and privacy/security. It is standardized that if average secured data are higher than median, satisfaction level is higher and otherwise lower than average.

Cronbach's alpha test was applied to test reliability of gathered data 10 items have .758 Cronbach alpha coefficients which was higher than suggested level by (Teeroovengadam, Kamalanabhan, & Seebaluck, 2016).

The questionnaire developed included personal information about

respondents such as gender, age and education. There were also five-point Likert scale questions in which respondents were asked to express to what extent they perceived the determinants of m-banking service (Accessibility, Reliability, Convenience, Security). Simple descriptive statistics such as median and mode for level of satisfaction, Kruskal-Wallis, Mann-Whitney U Test, etc. was used particularly to analyze the factors effecting customer satisfaction and issues related to it. SPSS is used to analyze the responses of respondents.

**3. ANALYSIS AND INTERPRETATION OF DATA**  
**3.1 UTILIZATION OF MOBILE BANKING SERVICE**

Table 2: Level of Utilization of Mobile Service Among Co-Operative Members

S. N	Co-operatives	No of member	Member utilizing service	%
1	Hatemalo Saving and Credit Co-operative Society Limited.	2614	821	31.41%
2	Upayogi Sahasrabdi Bachat Tatha Rin Sahakari Sanstha limited	1671	550	32.91%

Table no. 2 shows that members in both cooperatives are using mobile banking below than 50%. The result indicates that

cooperative investment is not utilized utmost.

**3.2 QUESTIONNAIRE WISE SATISFACTION LEVEL OF CO-OP MEMBER**

*Table 3: Level of Satisfaction Among Co-Operative Members*

S. N	Member satisfaction questionnaire	Median	Mode
Q.1	M-banking service of the co-operative is easy to use.	4	4
Q.2	Speed to login and logout of the co-operative mobile banking app is fast.	4	4
Q.3	Contents on co-operative mobile banking app are up to date.	4	4
Q.4	The co-operative mobile banking app provides all details of products and services	4	4
Q.5	The co-operative provides customer service over the telephone when needed.	4	4
Q.6	Can rely on co-operative for not misusing information.	4	4
Q.7	Language and contents used in co-operative mobile banking app is easy to understand.	4	4
Q.8	The m-banking service of the co-operative is user friendly.	5	4
Q.9	The transaction on co-operative mobile banking app is confidential.	4	4
Q.10	The m-banking service of co-operative suggest for creation of strong password.	4	4
	Overall	4	4

Table 3 depicts that the median and mode values had the same that was more than moderate satisfaction among coop’s member satisfaction. It suggests that the

administration should maintain the standard of m-banking facilities and keeping update to new feature for that.

*Table 4: Gender Wise Median on Co-Op’s Member’s Satisfaction*

Gender	Median
Male	4
Female	4

Table 4 shows that the male and female co-operatives members had the same level of satisfaction while using mobile banking application regarding

accessibility, reliability, convenience and privacy/security.

**3.3 CO-OPERATIVE’S SATISFACTION LEVEL BETWEEN MALE AND FEMALE.**

Table 5: Hypothesis Test Between Male and Female.

Null Hypothesis	Test	Sig.	Decision
The distribution of Median overall is the same across categories of Gender of coop Respondent.	Independent Samples Mann-Whitney U Test	.08	Accept the null hypothesis.

Independent Samples Mann-Whitney U Test depicted in table 5 indicates that sig. (P) was higher than .05 which indicated that member's satisfaction between male and female was same. It was also supported that table no 6 showed overall member's satisfaction for female and male was median 4.

Table 6: Age Wise Median on Co-Op's Member's Satisfaction.

S.N.	Age group	Median
1	Below 20	4
2	20-30	5
3	31-40	5
4	41-50	4
5	Above 50	3

Table 6 shows that the co-operatives member's above 50 age group had comparative low level of satisfaction than rest others age group while using mobile banking application regarding accessibility, reliability, convenience and privacy/security.

**3.4 CO-OPERATIVE'S SATISFACTION LEVEL BETWEEN DIFFERENT RESPONDENTS' GROUPS OF AGES.**

Table 7: Hypothesis Test Between Different Respondents' Groups of Ages

Null Hypothesis	Test	Sig.	Decision
The distribution of Median overall is the same across categories of age of coop Respondent.	Independent Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.

Independent Samples Kruskal-Wallis U Test depicted in table 8 indicates that sig. (P) was less than .05 which indicated that member's satisfaction between different respondents' groups of ages was significantly different. It was also supported that table no 8 showed overall member's satisfaction median are not same.

Table 8: Education Wise Median on Co-Op's Member's Satisfaction.

S.N.	Level of education	Median
1	S.L.C / S.E.E	3
2	+2	4
3	Bachelors	5
4	Masters and above	5

Table 8 shows that the co-operatives member's having S.L.C/S.E.E qualification was comparative low level of satisfaction than rest others education group while using mobile banking application regarding accessibility, reliability, convenience and privacy/security.

**Table 9: Hypothesis Test Between Different Level of Education**

Null Hypothesis	Test	Sig.	Decision
The distribution of Median_overall is the same across categories of education of coop Respondent.	Independent Samples Kruskal-Wallis Test	.001	Reject the null hypothesis.

Independent Samples Kruskal-Wallis U Test depicted in table 10 indicates that sig. (P) was less than .05 which indicated that member's satisfaction between different respondent's level of education was significantly different. It was also supported that table no 9 showed overall member's satisfaction are not same among different educational levels.

#### 4. RESULTS AND DISCUSSION

In the study four aspects of co-operative member's satisfaction related information were asked to rate the respondents about their level of knowledge on the 10 items. Cronbach's alpha test was applied to test reliability of gathered data 10 items have .828 Cronbach alpha coefficients which was higher than suggested level by (Teeroovengadam, Kamalanabhan, & Seebaluck, 2016).

Study revealed that average satisfaction of co-operative member's in Hatemalo Saving and Credit Co-operative Society Limited and Upayogi Sahasrabdi Bachat Tatha Rin Sahakari Sanstha limited was high than moderately satisfied having 4 overall medians. Like the study of Thakuri (2023) attributes of mobile banking affects the customer satisfaction (Thakuri, Dhakal, Danuwar, Baral, & Koirala, 2023)

Both male and female co-operative members have same moderately satisfied level 4 regarding m-banking and the research conducted by Hejmadi (2019) also support the result (Hejmadi, 2019). But the satisfaction level according to members' age are vary as research finding conducted by Mkpjojogu, Hashim, and Adamu (2016). There are different satisfaction levels among different group of education are identified (Arora & Lochab, 2018). Co-operative members having educational

qualification S.E.E/S.L.C had moderately satisfied with 3 median and then gradually increased at the level of satisfaction with the increase at the education level.

#### 5. CONCLUSION

It is concluded that co-operative members according to gender, age and education have no similar level of satisfaction. This study identified the four major m-banking service attributes; accessibility, reliability, convenience and security satisfy customer satisfaction. It is suggested to cooperative like Thakuri that significant enhancements must be made to strengthen security measures, ensure stable service and support, and establish a fairly structured cost system to ensure better modern banking and financial systems (Thakuri, Dhakal, Danuwar, Baral, & Koirala, 2023). Coop member are not utilizing mobile banking service so it is suggested as Regmi that cooperatives should come up with broader perspective with the vision of creating demand of mobile banking in Nepal's Market (Regmi, 2015). It is also suggested to apply technology-based course as a part of secondary school level and on words course curriculum to make mobile banking friendly among coop members (Arora & Lochab, 2018). It is also suggested to carry out effective coop education and mobile banking utilization training to include more members in the service provided.

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