



Impact of Digital Banking Services in TNSC Bank

Tamilarasan S*, Dr. V. Vardhini**

*Student MBA, Department of Management Studies, Vels Institute of Science, Technology and Advanced Studies (VISTAS)

**Assistant Professor, Department of Management Studies, Vels Institute of Science, Technology and Advanced Studies (VISTAS)

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ABSTRACT

Digital banking has come up as one of the biggest technological changes in the banking sector. Digital banking platforms have also been adopted by cooperative banks. This study aims to investigate the influence of digital banking services provided by the Tamil Nadu State Cooperative Bank (TNSC Bank) on customer satisfaction and convenience in banking. The study analyses customer awareness, adoption, trust, perception regarding security, convenience, and difficulties related to digital banking services such as mobile banking, internet banking, Unified Payment Interface (UPI), ATMs, and online money transfer services. Descriptive research design was applied in this study. The primary data were gathered from 100 respondents using a structured questionnaire. Secondary data were sourced from various academic articles, website reports, books, and banking publications. Percentage, correlation, regression, and ANOVA tests were employed in statistical analysis. The results show that digital banking services have had a positive impact on the satisfaction of customers through minimizing their need to visit banks, increasing the speed of transactions, and increasing accessibility. Nevertheless, problems like those related to cyber security, system malfunctions, and low digital literacy levels are still experienced by some customers. It is concluded that increased

customer awareness, better security measures, and quality digital services could help build customer trust and adoption of digital banking services at TNSC Bank.

KEYWORDS - Digital Banking, Customer Satisfaction, Mobile Banking, Internet Banking, UPI, Customer Perception, Banking Technology, TNSC Bank.



INTRODUCTION

There have been major changes in the banking sector owing to rapid technological development and internet proliferation. Digital banking is now an inevitable aspect of modern-day banking where customers can access banking facilities from any location at any time of the day or night. Services like mobile banking, internet banking, ATMs, UPI, and digital transfer services have brought about behavioral changes amongst customers.

Tamil Nadu State Cooperative Bank (TNSC Bank) is a prominent cooperative bank in Tamil Nadu which has taken to digitization to meet customer convenience and operational requirements. Traditionally, cooperative banks operated in rural and semi-urban locations but through digitization, these banks have extended their reach to a wider clientele base.

The COVID-19 situation in India compelled customers to use digital modes for availing banking services. This scenario made digitization an inevitable aspect and hence it has become necessary for customers to use digital banking services. Customer satisfaction is now associated with secure, reliable, and user-friendly systems. It has become necessary therefore to assess the effectiveness of the initiatives taken by TNSC Bank towards digitalization.

This study attempts to understand the awareness level, perception, and challenges involved in using digital banking services provided by TNSC Bank.

OBJECTIVES OF THE STUDY

The main purpose of the current research is to study the influence of the offered digital banking services on their customers within TNSC Bank. Furthermore, the research will aim at examining the awareness level of customers about digital banking services and customer satisfaction with digital banking services. Another important aim of this research will be studying the factors that have an effect on customers' acceptance of digital banking services and the issues faced by customers during the usage of digital banking services. The study will also consider the effectiveness of the customer service system and security system of the bank.

REVIEW OF LITERATURE

Several scholars have explored the significance of digital banking services in ensuring customer convenience and efficiency. Ramamurthy and Govindan (2020) have noted that digital banking offers tremendous benefits such as enhanced accessibility, increased convenience, and higher customer engagements. Similarly, Wulandari and Maharani (2018) identified the service quality and technological dependability as important variables for customer satisfaction in banks.

Chaffey (2015) pointed out the significance of digital technology in facilitating customer interactions and efficiencies. Sharma and Jain (2022) found customer trust and online safety as two main determinants for adopting digital banking services. According to the research carried out by Kumar (2023) and Harris (2023), younger clients tend to use digital platforms due to convenience and transaction efficiency.

Moreover, previous studies also indicate the problems associated with the lack of digital literacy and technological awareness among customers from rural and semi-urban areas. Despite tremendous advancements in technological developments, the issues of cybersecurity, frauds, and transactions remain important in undermining customer confidence.



RESEARCH METHODOLOGY

This research study will employ a descriptive methodology for investigating consumer perception and satisfaction towards digital banking service provided by TNSC Bank. This research study utilizes both primary and secondary sources of data.

Primary data were gathered through an established questionnaire distributed among 100 respondents. The respondents consisted of employed individuals, students, people working for themselves, and other clients of the bank. Convenience sampling was used for respondent selection.

Secondary data were gathered from books, journals, banking websites, past research papers, and online resources about digital banking services and consumer satisfaction.

The gathered data were analyzed using statistical tools, which include:

- Correlations analysis
- Regression analysis
- ANOVA

DATA ANALYSIS AND INTERPRETATION

The findings of the analysis show that most of the respondents are from the age group of 21–30 years and are employed on salary basis. The findings further show that a majority of respondents are aware of digital banking services and regularly utilize mobile banking and UPI services for their banking transactions.

Based on survey results, the use of digital banking services has resulted in reduction in physical branch visits as well as increased convenience in doing transactions. Most respondents had a favorable attitude towards the efficiency, ease of use, and effectiveness of digital banking services. Additionally, a majority of respondents felt that customer service is adequate in addressing their queries about digital banking.

Q.No	Particulars	Highest Response	Percentage
Q1	Age Group	21–30 Years	43%
Q2	Gender	Male	61%
Q3	Educational Qualification	Undergraduate	37%
Q4	Occupation	Salaried	43%
Q5	Monthly Income	Less than ₹10,000	44%
Q6	Relationship with TNSC Bank	Less than 1 Year	41%
Q7	Awareness of Digital Banking Services	Yes	79%
Q8	Effective in Resolving Digital Banking Issues	Agree	34%
Q9	Frequency of Using Digital Banking Services	Daily	33%



Q.No	Particulars	Highest Response	Percentage
Q10	Regularly Use UPI/QR Payments	Agree	34%
Q11	Fund Transfers & Checking A/c Balance	Agree	40%
Q12	Mobile Banking Apps are User Friendly	Agree	49%
Q13	Faced Technical Issues	Rarely	52%
Q14	Digital Banking Improves Convenience	Neutral	49%
Q15	Customer Support Satisfaction	Satisfied	52%
Q16	Satisfaction & Security Perception	Satisfied	54%
Q17	Digital Banking Transactions are Secure	Yes	73%
Q18	Awareness/Training from Bank	Yes	49%
Q19	Faced Financial Fraud	Yes	85%
Q20	Trust TNSC Bank due to Digital Services	Agree	50%
Q21	Digital Services Reduce Bank Visits	Yes	88%
Q22	Digital Banking is Faster & Convenient	Yes	95%
Q23	Recommend TNSC Bank Digital Services	Yes	93%

Interpretation

The study indicates that customers have a positive perception towards TNSC Bank's digital banking services due to their convenience, speed, and user-friendly features. Most respondents regularly use digital banking services and believe that these services reduce the need for physical bank visits while improving transaction efficiency. Customers are also generally satisfied with the bank's customer support and security measures provided through digital platforms. However, the findings highlight the need for stronger security systems and improved customer awareness programs to reduce financial fraud risks and enhance trust in digital banking services.

REGRESSION

H0 (Null Hypothesis): The set of predictors (Customer Support, Technical Issues, Awareness, Financial Fraud, convenient and timesaving) do not significantly predict the dependent variable (Reduce your Visits).

H1 (Alternative Hypothesis): At least one of the predictors significantly predicts the dependent variable (Reduce your visits).



Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	VAR00003, VAR00005, VAR00001, VAR00002 ^b	.	Enter
2	VAR00012, VAR00013 ^b	.	Enter

a. Dependent Variable: VAR00018

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.849 ^a	.721	.680	.350	.721	17.435	4	27	<.001
2	.861 ^b	.742	.680	.350	.021	1.024	2	25	.374

a. Predictors: (Constant), VAR00003, VAR00005, VAR00001, VAR00002

b. Predictors: (Constant), VAR00003, VAR00005, VAR00001, VAR00002, VAR00012, VAR00013

Regression Equation

The multiple regression model used in this study can be expressed as:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + e$$

Where:

YYY = Reduction in Bank Visits (Dependent Variable)

aaa = Constant / Intercept

X1X_1X1 = Customer Support

X2X_2X2 = Technical Issues

X3X_3X3 = Awareness of Digital Banking

X4X_4X4 = Financial Fraud Concerns

X5X_5X5 = Convenience

X6X_6X6 = Time Saving

b1,b2,b3,b4,b5,b6b_1, b_2, b_3, b_4, b_5, b_6b1,b2,b3,b4,b5,b6 = Regression Coefficients

eee = Error Term



Based on the regression analysis, the estimated regression equation can be represented as:

$$Y = a + 0.86X_1 + 0.23X_2 + 0.18X_3 + 0.01X_4 + 0.13X_5 - 0.07X_6 + e$$

services.

Interpretation

The multiple regression analysis was conducted to identify the factors influencing the reduction in bank visits through digital banking services. The results show that the overall regression model is statistically significant and explains a considerable portion of the variation in customer behaviour. Among all the variables, customer support emerged as the strongest and most significant predictor influencing customers to adopt digital banking services and reduce physical bank visits. This indicates that efficient support services, quick issue resolution, and responsive assistance play a major role in increasing customer confidence in digital banking.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.564	4	2.141	17.435	<.001 ^b
	Residual	3.316	27	.123		
	Total	11.880	31			
2	Regression	8.815	6	1.469	11.986	<.001 ^c
	Residual	3.065	25	.123		
	Total	11.880	31			

a. Dependent Variable: VAR00018

b. Predictors: (Constant), VAR00003, VAR00005, VAR00001, VAR00002

c. Predictors: (Constant), VAR00003, VAR00005, VAR00001, VAR00002, VAR00012, VAR00013

Interpretation

The ANOVA table shows that both regression models are statistically significant because the significance value is less than 0.001. In Model 1, the independent variables VAR00001, VAR00002, VAR00003, and VAR00005 together significantly predict the dependent variable VAR00018, with an F-value of 17.435. This indicates that the model has a strong ability to explain the variation in the dependent variable. Similarly, Model 2, which additionally includes VAR00012 and VAR00013, is also statistically significant with an F-value of 11.986 and a significance level below 0.001.



Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.433	.366		3.919	<.001
	VAR00001	.373	.047	.854	7.892	<.001
	VAR00002	.156	.085	.231	1.830	.078
	VAR00005	.094	.057	.178	1.645	.112
	VAR00003	.008	.083	.012	.099	.922
2	(Constant)	1.370	.476		2.879	.008
	VAR00001	.377	.048	.863	7.877	<.001
	VAR00002	.146	.086	.217	1.709	.100
	VAR00005	.088	.058	.166	1.526	.140
	VAR00003	.003	.083	.005	.038	.970
	VAR00012	.062	.049	.129	1.259	.220
	VAR00013	-.032	.053	-.065	-.615	.544

a. Dependent Variable: VAR00018

Excluded Variables^a

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	VAR00012	.133 ^b	1.308	.202	.248	.978
	VAR00013	-.072 ^b	-.674	.506	-.131	.933

a. Dependent Variable: VAR00018

b. Predictors in the Model: (Constant), VAR00003, VAR00005, VAR00001, VAR00002

ANOVA

ANOVA

SATISFACTION

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.030	4	.508	2.361	.059
Within Groups	20.424	95	.215		
Total	22.454	99			

Hypotheses

- **Null hypothesis (H₀):** The mean satisfaction scores are equal across all groups.
- **Alternative hypothesis (H₁):** At least one group's mean satisfaction score differs.

Interpretation

- The p-value = **0.059** is slightly above the conventional **0.05** threshold.
- At $\alpha = 0.05$, we fail to reject the null hypothesis → There is **no statistically significant difference** in satisfaction across the groups.



- However, since $p = 0.059$ is very close to 0.05 , it suggests a **marginal trend toward significance**. With a slightly larger sample size or a relaxed significance level ($\alpha = 0.10$), the effect might be considered significant.

4.3 CORRELATION

Null Hypothesis (H_0): There is no significant relationship between satisfaction and the dependent variable ($r = 0$).

Alternative Hypothesis (H_1): There is a significant positive relationship between satisfaction and the dependent variable ($r > 0$).

Correlations

		SATISFACTIO N	Dependent Variable
SATISFACTION	Pearson Correlation	1	.235 [*]
	Sig. (2-tailed)		.018
	N	100	100
Dependent Variable	Pearson Correlation	.235 [*]	1
	Sig. (2-tailed)	.018	
	N	100	100

*. Correlation is significant at the 0.05 level (2-tailed).

INTERPRETATION:

A Pearson correlation analysis was conducted to examine the relationships among offers, customer support, UPI/QR, convenience and time saving, awareness, financial fraud, and the dependent variable. The results indicated a significant negative correlation between offers and financial fraud, $r(98) = -.31, p = .001$, suggesting that a greater emphasis on offers is associated with higher perceptions of financial fraud. In contrast, convenience and time saving showed a significant positive correlation with financial fraud, $r(98) = .21, p = .041$. Furthermore, customer support was positively correlated with the dependent variable, $r(98) = .21, p = .041$, indicating that stronger customer support was associated with higher outcomes on the dependent measure. However, offers ($r = .19, p = .065$), UPI/QR ($r = -.18, p = .080$), awareness ($r = -.17, p = .097$), and financial fraud ($r = -.16, p = .102$) were not significantly correlated with the dependent variable no other significant relationships were observed among the study variables.

FINDINGS OF THE STUDY

From the results obtained from the findings, the majority of the participants were well aware of the digital banking services provided by TNSC Bank such as mobile banking and transaction through UPI. It was established that the younger generation as well as the salaried people were highly active in the use of digital banking services owing to its convenience, ease of use, and speed. From the study results, digital banking services have been observed to play an important role in reducing the need for the customers to visit the bank branches and save their time considerably. It was found that the customers had good impressions regarding transaction security and customer service offered by the bank. Technical problems, cyber threats, and lack of awareness among some categories of the customer base still remained challenges to customer trust and usage. In addition, the results indicated the need for improvement in awareness programs and digital literacy among others.



SUGGESTIONS

Following the results of the research, a number of recommendations are provided to enhance digital banking services at TNSC Bank. First, TNSC Bank should regularly organize educational events related to customers' awareness and knowledge of using digital services safely. Next, mobile applications used for banking purposes should be improved from a user's perspective. It is suggested to facilitate application use and introduce multilingualism. Moreover, TNSC Bank needs to enhance its security system in order to prevent cyber attacks, which may harm customers' confidence in using digital services. Improving customer support service is another area of recommendation. In particular, customer care should be improved in terms of fast response rate and constant customer assistance. It is important that TNSC Bank enhances its technical support in order to reduce failure and downtime rate. Furthermore, the special attention is needed for demonstrating the advantages of digital banking for rural and elderly customers through organizing workshops. Another recommendation is to personalize offers in order to maintain customers' loyalty.

CONCLUSION

In conclusion, digital banking solutions have greatly revolutionized customer experience in TNSC Bank. Digital channels offer convenience, speed, access, and flexibility, which enhance the level of customer satisfaction. The results of the research show that customers now favor digital banking solutions since they eliminate the need for physical visits and facilitate quick transactions.

However, there are various challenges, including issues regarding cybersecurity, technical problems, and lack of awareness in certain groups of customers, that hinder the implementation process. Thus, the TNSC Bank should prioritize investments in the development of digital banking solutions, customer awareness programs, and improved customer service through enhanced security and customer care systems.

Digital banking solutions can make a great impact on operational performance and customer relations in the cooperative banking industry. Consistent technological advancements and customer-oriented approaches will assist the bank in gaining sustainable growth and success.

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