

Overcoming Barriers: A Study On Customer Perceptions and Key Challenges in Technology-Enabled Services of State Bank of India

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Introduction

In past 10 years, banks in India have invested heavily in the technology such as Tele banking, mobile banking, net banking, ATMs, credit cards, debit cards, electronic payment systems and data warehousing and data mining solutions, to bring improvements in quality of customer services and the fast processing of banking operation. Information technology in banking sector can be defined as use of sophisticated information and communication technologies together with computer to better serve the customers with more accurate, reasonable and affordable banking products and services to customers. The technology enabled services also provide banks with larger market share, more profitability and customized banking services to customers. Competition will increase as new players enter the industry, but the long-term impact is more open. Regulation will decisively influence to what extent Big Tech will enter the industry and who the dominant players will be. The significance of technology is greatly felt in the financial sector in view of the competitive advantage for banks resulting in the efficient customer service.

The governments also trying to provide assistance to better serve the customers and providing some of the financial assistance to find some of the innovative technologies. The banking institutions are also continuously monitoring the market and analyzing the customer's perceptions and market competitors to new technologies to gain the market share. Customers are always expecting for the better and customized banking services for the easy transactions. The banking

But the technological advancement also has some of the draw backs in providing hassle free transactions. There are various problems associated with the technology enabled services in banking technologies. The technological advancement needs education at initial stages, one must have internet connection, one must have some mobile with android for better banking etc. The present study will focuses the problems associate with the technology enabled services of state bank of India.

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Review Of Literature

1. **Retail Banking Satisfaction Study (2010):** This study highlights a concerning trend in retail banking customer satisfaction, with a four-year consecutive decline to 748 on a 1,000-point scale. The primary reason for this decline appears to be poor marks in customer service. Banks are facing increasing challenges in meeting customer expectations and retaining satisfaction levels.
2. **Mohammad Al-Hawari (2009):** The Relationship Between Service Quality and Retention in Retail Banking: Al-Hawari's research delves into the impact of service quality on customer retention in both traditional and automated retail banking contexts in Australia. Traditional service quality factors are found to significantly influence customer retention, whereas automated service quality does not exhibit a similar positive influence. This suggests a need for banks to focus on enhancing traditional service quality to improve customer retention.
3. **Retail Banking Satisfaction Study (2008):** In the United States, banks are encountering various challenges, including customer perceptions of bank stability and integrity. Customers express doubts regarding basic banking activities and are dissatisfied with poor problem resolution, long wait times, and excessive fees. These issues collectively contribute to an overall decline in customer satisfaction with retail banks, placing pressure on banks to streamline services and improve their bottom line.
4. **Financial Technology in the Banking Industry: Challenges and Opportunities** (Ahmed Taha Al Ajlouni & Monir Suliaman Al-Hakim, April 2018): This study explores the evolution of the financial industry through technology-enabled banking services, particularly focusing on future research proposals in Arab countries. It emphasizes the importance of integrating technology to enhance banking services and improve customer experience.
5. **Digital Disruption in Banking and Its Impact on Competition (OECD 2020):** The OECD's report underscores the shift towards customer-centric banking technologies and the challenges posed by digital disruption in the banking sector. New entrants and technological advancements are reshaping the competitive landscape, leading to restructuring issues for incumbents. The report emphasizes the need for leveraging new technologies to benefit customers while ensuring the financial stability of banks.

Summary and Insights: These studies collectively highlight the evolving landscape of retail banking, characterized by challenges in customer satisfaction, the impact of service quality on retention, technological advancements shaping banking services, and the transformative effects of digital disruption. The findings underscore the importance of addressing customer needs, enhancing service quality, and embracing technological innovations to navigate the changing dynamics of the banking industry effectively. Future research should focus on innovative strategies to improve customer satisfaction, foster retention, and leverage emerging technologies for sustainable growth and competitiveness in the banking sector.

Need and Importance of the study

The present research plays a critical role in helping the State Bank of India (SBI) identify and address key customer pain points, such as network connectivity problems, high transaction costs, and payment gateway issues. By collecting primary data through surveys and questionnaires, SBI can evaluate customer satisfaction with various aspects of its technology-enabled services, including daily deposit limits and time access. These insights enable SBI to enhance service quality, resolve technical issues, and improve its digital offerings. Additionally, the research also supports strategic decision-making by providing data-driven insights into customer expectations and preferences, allowing SBI to tailor its services to better meet client needs. It also helps SBI identify competitive advantages by comparing its technology-enabled services with those of competitors, highlighting strengths to build on and areas for improvement. Ultimately, marketing research ensures that SBI can continue to develop customer-centric services that align with the evolving demands of digital banking, enhancing both efficiency and customer satisfaction.

Objectives

- To identify key issues in technology-enabled services of State Bank of India (SBI) from the customers' perspective.
- To analyze customer perceptions regarding network connectivity and transaction costs in SBI's technology-enabled services.
- To assess customer satisfaction with payment gateways, time access, and daily deposit limits in SBI's technology-enabled services.

Hypothesis

Hypothesis 1: Key issues in SBI's technology-enabled services significantly affect customer satisfaction.

Hypothesis 2: Network connectivity and transaction costs have a significant effect on customer perceptions of SBI's technology-enabled services.

Hypothesis 3: Payment gateway performance, time access, and daily deposit limits significantly influence customer satisfaction with SBI's technology-enabled services.

Questionnaire

To collect customer perceptions, a structured questionnaire has been designed. A questionnaire is a widely used and flexible tool for gathering primary data directly from respondents about their behavior, demographics, knowledge, attitudes, beliefs, and feelings. It can include open-ended questions (allowing respondents to answer in their own words), multiple-choice questions, and dichotomous questions (with pre-specified choices). The questionnaire also employs a 5-point Likert scale, which measures levels of agreement or disagreement, with equal intervals from positive to negative, and a neutral midpoint for balanced responses.

The reliability of the questionnaire is tested with Cronbach's alpha resulting in the value of alpha as 0.855. It can be inferred that the research questionnaire is associated with the research objectives and the questions had meaning.

Structure Of Questionnaire

1	Demographics	A2-A6	For all cross tabulation
2	Problems associated with the technology enabled services of SBI	Pr 1 – Pr7	Objective

Statistical Techniques Used

To draw conclusions from the hypotheses, various statistical tools were applied. Measures of central tendency like percentages, mean, and standard deviation were used to analyze the frequency and distribution of variables. Respondents rated on a 5-point scale. Cronbach's Alpha tested data reliability, while the Kaiser-Meyer-Olkin (KMO) measure assessed data suitability for structure detection. Factor analysis was employed to simplify data and reduce the number of variables under study.

Chi Square Test is used to test the relationship between the samples collected.

Table: 1: Frequency distribution of perception of customers with respect problems of slowdown in network

Slowdown in network			
	Frequency	Percent	Cumulative percent
Not at all a problem	166	27.7	27.7
Minor problems	267	44.5	72.2
Moderate problems	95	15.8	88.0
Serious problems	72	12.0	100.0
Total	600	100.0	

Source: Primary Data

The table shows customer perceptions of network slowdown in SBI's services. Most respondents, **44.5% (267)**, see it as a **minor issue**, while **27.7% (166)** report **no problem**. A smaller group, **15.8% (95)**, view it as a **moderate problem**, and **12.0% (72)** consider it a **serious issue**. Overall, the majority experience little to no disruption, but nearly **28%** report moderate to serious concerns, indicating room for improvement.

Table: 2: Frequency distribution of perception of customers with respect problems of connectivity problems

Connectivity problems			
	Frequency	Percent	Cumulative percent
Not at all a problem	138	23.0	23.0
Minor problems	271	45.2	68.0
Moderate problems	104	17.3	85.3
Serious problems	87	14.5	99.8
Total	600	100.0	

Source: Primary Data

Table 2 presents the frequency distribution of customer perceptions regarding connectivity issues in SBI's services. The majority of respondents, **45.2% (271)**, consider connectivity problems to be a **minor issue**, while **23.0% (138)** report **no problems** at all. **17.3% (104)** perceive connectivity problems as **moderate**, and **14.5% (87)** see them as a **serious issue**. Overall, most customers experience either no or minor connectivity issues, but a combined **31.8%** report moderate to serious concerns.

Table: 3: Frequency distribution of perception of customers with respect problems of High transactions cost

High transaction cost			
	Frequency	Percent	Cumulative percent
Not at all a problem	132	22.0	22.0
Minor problems	218	36.3	58.3
Moderate problems	128	21.3	79.7
Serious problems	122	20.4	100.0
Total	600	100.0	

Source: Primary Data

Table 3 shows customer perceptions regarding high transaction costs in SBI's services. A significant portion, **36.3% (218)**, view high transaction costs as a **minor problem**, while **22.0% (132)** report **no issue** at all. **21.3% (128)** consider it a **moderate problem**, and **20.4% (122)** perceive it as a **serious issue**. Overall, the data indicates that while most customers see it as a minor or non-issue, a notable **41.7%** of respondents report moderate to serious concerns about transaction costs.

Table: 4: Frequency distribution of perception of customers with respect problems of payment gateway issues

Payment gateway issues			
	Frequency	Percent	Cumulative percent
Not at all a problem	127	21.2	21.2
Minor problems	236	39.3	60.5
Moderate problems	117	19.5	80.0
Serious problems	120	20.0	100.0
Total	600	100.0	

Source: Primary Data

Table 4 presents customer perceptions regarding payment gateway issues in SBI's services. The majority of respondents, **39.3% (236)**, view payment gateway issues as a **minor problem**, while **21.2% (127)** report **no issues** at all. **19.5% (117)** perceive payment gateway issues as a **moderate problem**, and **20.0% (120)** see them as a **serious issue**. Overall, most customers experience minor or no problems, but a combined **39.5%** report moderate to serious concerns with payment gateway performance.

Table: 5: Frequency distribution of perception of customers with respect problems of limited time to access

Limited time to access			
	Frequency	Percent	Cumulative percent

Not at all a problem	134	22.3	22.4
Minor problems	228	38.1	60.5
Moderate problems	118	19.7	79.5
Serious problems	120	20.0	100
Total	600	100.0	100.0

Source: Primary Data

Table 5 shows customer perceptions regarding the limited time to access SBI's services. A majority, **38.1% (228)**, view limited access time as a **minor problem**, while **22.3% (134)** report **no issues**. **19.7% (118)** consider it a **moderate problem**, and **20.0% (120)** perceive it as a **serious issue**. While most respondents experience minor or no difficulties, a combined **39.7%** report moderate to serious concerns, indicating room for improvement in access time flexibility.

Table: 6: Frequency distribution of perception of customers with respect problems of limited deposit per day

Limited deposit for day			
	Frequency	Percent	Cumulative percent
Not at all a problem	121	20.2	20.2
Minor problems	205	34.2	54.3
Moderate problems	128	21.3	75.2
Serio*us problems	146	24.3	99.5
Total	600	100.0	

Source: Primary Data

Table 6 presents customer perceptions regarding the limitations on daily deposits at SBI. The largest group, **34.2% (205)**, views limited deposit amounts as a **minor problem**, while **20.2% (121)** report **no issues** at all. **21.3% (128)** consider it a **moderate problem**, and **24.3% (146)** perceive it as a **serious issue**. Overall, while most customers see limited

deposits as a minor concern, a significant **45.6%** report moderate to serious issues, indicating the need for attention to deposit limits.

Table: 7: Frequency distribution of perception of customers with respect problems of limited transaction per month

Limited transactions per month			
	Frequency	Percent	Cumulative percent
Not at all a problem	128	21.3	21.3
Minor problems	199	33.2	54.5
Moderate problems	105	17.5	72.0
Serious problems	168	28.0	100.0
Total	600	100.0	

Source: Primary Data

Table 7 displays customer perceptions regarding limitations on transactions per month at SBI. The majority, **33.2% (199)**, view this as a **minor problem**, while **21.3% (128)** perceive **no issue**. **17.5% (105)** consider it a **moderate problem**, and **28.0% (168)** see it as a **serious problem**. Though a good number of respondents find the issue minor or negligible, a significant **45.5%** experience moderate to serious concerns, indicating potential dissatisfaction with monthly transaction limits.

Factor Analysis to test the problems of technologies provided by State Bank of India

Table: 8: KMO and Bartlett's Test & problems associated with technologies provided SBI

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.800
Bartlett's Test of Sphericity	Approx. Chi-Square	1514.203
	Df	15
	Sig.	.000

To test the sampling adequacy of the data is collected to test the problems of the technologies provided by the SBI, KMO analysis is performed and the KMO value for the instrument was 0.800 which is acceptable as a good value. So that conducting factor analysis is useful for the study.

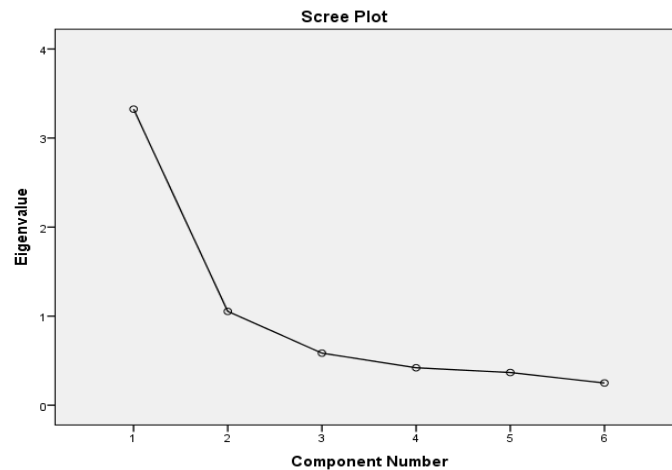
Bartlett's test of Sphericity is used to test the significance of the study and indicate validity and suitability of the instrument used and responses collected. The results concluded that the value is 0.000 which is significance for the study and performing factor analysis is useful.

Table:9: Total variance explained for problems associated with technologies provided by SBI

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.325	55.417	55.417	3.325	55.417	55.417
2	1.053	17.556	72.973	1.053	17.556	72.973
3	.585	9.746	82.719			
4	.420	7.002	89.721			
5	.367	6.115	95.835			
6	.250	4.165	100.000			

Extraction Method: Principal Component Analysis.

This table shows the actual factors that the problems faced by the respondents with respect to technology enabled services of SBI were extracted and the total variance of those factors extracted. First factor explains the variance in the dependent variable to an extent of 55.417 % and second factor with 17.556 % . Thus, two factors are explaining the cumulative variance in the Dependent variable to an extent of 72.973 % . The same is expressed in the Scree plot.



The scree plot shows the eigenvalue against the each factor. This can be used to find out how many factors to extract and retain the factors. From the above diagram there is sharp change in the curve after second factor. These two factors have the Eigenvalues above one and the factors below these three factors will have Eigenvalues less than one.

First factor rotation matrix

Table:10: Initial Rotated component matrix to problems with technologies provided by SBI

Rotated component matrix ^a		
	Component	
	1	2
Slowdown in network		.867
Connectivity problems		.834
High transaction cost	.549	.546
Payment gateway issues	.696	.302
Limited time to access	.810	.208
Limited deposit for day	.861	.193
Limited transactions per month	.834	.140

Extraction method: principal component analysis.

Rotation method: varimax with kaiser normalization

In order to get independent factors the factors with the highest (Above 0.6) are retained and the factors loadings less than to 0.6 are suppressed. From the above table the loadings for “**High Transaction Cost**” are similar so that the factor is suppressed and the rotated factor analysis again performed to get the new factors.

Table: 11: final rotated component matrix to problems with technologies provided by SBI

Rotated component matrix ^a		
	Component	
	1	2
Slowdown in network		.884
Connectivity problems		.839
Payment gateway issues	.703	
Limited time to access	.817	
Limited deposit for day	.869	
Limited transactions per month	.841	

Extraction method: principal component analysis.

Rotation method: Varimax with Kaiser Normalization.

A. Rotation converged in 3 iterations.

The Principal Component Analysis (PCA) has been extracted for two factors. In order to identify the factors, 0.60 is taken as the cut-off point and taken those variables which have extracted the variance for more than 0.60 is taken into consideration to include in the respective factor. Thus, the **first factor** includes the variables like Payment Gateway Issues, limited Time to Access, and limited deposit per day and limited transactions per month. These factors are considered as the Bank Related Problems. Similarly, slowdown in network and connectivity Problems are extracted for second factor. And these factors are considered as network related problems.

Factors extracted for problems of technologies provided by State Bank of India			
Bank Related Problems	Payment gateway issues(0.703)	D4	55.417
	Limited time to access(0.817)	D5	
	Limited deposit for day(0.869)	D6	
	Limited transactions per month(0.841)	D7	
Network Related Factors	Slowdown in network(0.884)	D1	72.973
	Connectivity problems(0.839)	D2	

H0: There is no significant relationship between the gender and perceptions towards problem of slowdown in network.

Hypothesis: No significant relationship exists between gender and perceptions of network slowdown problems.

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.093 ^a	3	.028
Likelihood Ratio	9.383	3	.025
Linear-by-Linear Association	6.889	1	.009
No of valid cases	600		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 21.72.

The Pearson Chi-Square value is 9.093 (df = 3, p = 0.028). Since $p < 0.05$, we reject the null hypothesis, indicating a significant relationship between gender and perceptions of network slowdown issues.

H0: No significant relationship exists between gender and perceptions of connectivity problems.

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.677 ^a	4	.795
Likelihood Ratio	1.977	4	.740
Linear-by-Linear Association	1.101	1	.294
No of valid cases	600		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is .30.

The Pearson Chi-Square value is 1.677 (df = 4, p = 0.795). Since $p > 0.05$, we accept the null hypothesis, indicating no significant relationship between gender and perceptions of connectivity issues.

H0: No significant relationship exists between gender and perceptions of high transaction costs.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.795 ^a	4	.044
Likelihood Ratio	9.986	4	.041
Linear-by-Linear Association	2.015	1	.156
No of valid cases	600		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is .30.

The Pearson Chi-Square value is 9.795 (df = 4, p = 0.044). Since $p < 0.05$, we reject the null hypothesis, indicating a significant relationship between gender and perceptions of high transaction costs.

H0: No significant relationship exists between gender and perceptions of payment gateway issues.

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.958 ^a	3	.114
Likelihood Ratio	6.134	3	.105
Linear-by-Linear Association	3.097	1	.078
No of valid cases	600		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 35.30.

The Pearson Chi-Square value is 5.958 (df = 3, p = 0.114). Since $p > 0.05$, we accept the null hypothesis, indicating no significant relationship between gender and perceptions of payment gateway issues.

H0: No significant relationship exists between gender and perceptions of limited time access.

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.192 ^a	4	.085
Likelihood Ratio	9.162	4	.057
Linear-by-Linear Association	6.549	1	.010
No of valid cases	599		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is .91.

The Pearson Chi-Square value is 8.192 (df = 4, p = 0.085). Since $p > 0.05$, we accept the null hypothesis, indicating no significant relationship between gender and perceptions of limited time access.

H0: No significant relationship exists between gender and perceptions of limited deposits per day.

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-

			sided)
Pearson Chi-Square	5.557 ^a	4	.235
Likelihood Ratio	5.467	4	.243
Linear-by-Linear Association	.536	1	.464
No of valid cases	600		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is .91.

The Pearson Chi-Square value is 5.557 (df = 4, p = 0.235). Since $p > 0.05$, we accept the null hypothesis, indicating no significant relationship between gender and perceptions of limited deposits per day.

Findings:

The findings show that many customers view network slowdown and connectivity issues as minor problems, yet a significant number express moderate to serious concerns, indicating areas for improvement. High transaction costs and payment gateway issues are also mainly seen as minor, but many customers report dissatisfaction. Factor analysis identified two main categories of concerns: Bank Related Problems, which include payment gateway issues and limits on access and transactions, and Network Related Problems, which involve network slowdown and connectivity issues. Additionally, gender influences perceptions of network slowdown and high transaction costs, but it does not affect views on connectivity issues, payment gateway problems, limited access time, or deposit limits.

Overall, most respondents reported encountering minor problems across various technology aspects. The data's adequacy for analysis was confirmed through KMO measures and Bartlett's test. Two factors were identified, explaining a significant portion of the variance. The first factor relates to bank-related issues, while the second factor pertains to network issues. In summary, SBI customers face minor but frequent technology-related challenges, categorized into bank-related and network-related problems, with gender affecting perceptions of some issues.

Conclusions

The study reveals that customer demographics, particularly profession, significantly influence perceptions of internet banking issues. Chi-square results indicate that profession has a greater impact on concerns such as network slowdown and transaction limitations. Network slowdown is identified as the major problem, with notable dissatisfaction over daily and monthly withdrawal limits. The findings suggest a need for banks to address these concerns and simplify online services, particularly for less educated and older customers, to improve overall satisfaction and adoption of internet banking. Educational initiatives should also be implemented to broaden customer engagement across diverse demographics.

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