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A Study on Factors Influencing Customer Satisfaction with Mobile Banking Services in Nationalised Banks in India

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Abstract**-- This study examines the key factors influencing customer satisfaction with mobile banking services offered by nationalised banks in India. With the rapid growth of digital technology, smartphones, and internet accessibility, mobile banking has become an essential service channel in the Indian banking sector. Nationalised banks have increasingly adopted mobile banking platforms to improve accessibility, convenience, and service efficiency for customers across urban and semi-urban areas. In this context, understanding the determinants of customer satisfaction is vital for ensuring continued usage and enhancing service delivery.**

The primary objective of the study is to identify and analyse the major factors affecting customer satisfaction with mobile banking services. The study focuses on variables such as ease of use, perceived security and privacy, service quality, customer trust, and technological performance. A quantitative research approach with descriptive and analytical design was adopted. Primary data was collected from 200 users of mobile banking services in nationalised banks through a structured questionnaire based on a 5-point Likert scale. The data was analysed using descriptive statistics, correlation, reliability testing, ANOVA, and multiple regression analysis.

The findings reveal that customers generally hold a positive perception of mobile banking services, with mean scores close to 4 for all variables. Reliability analysis yielded a Cronbach's Alpha value of 0.938, indicating excellent internal consistency. Regression analysis shows that the selected variables explain 52.6% of the variation in customer satisfaction ($R^2 = 0.526$), while ANOVA confirms the statistical significance of the model. Among all factors, customer trust emerged as the most significant predictor of satisfaction, followed by technological performance and service quality. The study concludes that strengthening trust, improving technological efficiency, and maintaining high service quality are essential for enhancing customer satisfaction and ensuring long-term customer retention in nationalised banks.

I. INTRODUCTION

The rapid advancement of digital technology has transformed the Indian banking sector, with mobile banking emerging as a key service delivery channel. Nationalised banks such as the State Bank of India, Punjab National Bank, and Bank of Baroda have adopted mobile banking to expand accessibility and improve efficiency. Supported by the Digital India initiative, increasing smartphone usage and internet penetration have accelerated the adoption of these services across both urban and rural areas.

Customer satisfaction plays a crucial role in determining the success of mobile banking services. It is influenced by factors such as ease of use, transaction speed, system reliability, security, and service quality. Features like user-friendly interfaces, secure authentication, quick transactions, and effective grievance redressal enhance customer trust and experience. However, issues such as technical errors, delayed transactions, security concerns, and limited digital literacy among some users continue to pose challenges.

This study focuses on identifying the key factors influencing customer satisfaction with mobile banking services in nationalised banks in India. It aims to provide insights for improving service quality, enhancing user experience, and promoting wider adoption.

II. LITERATURE REVIEW

The literature review presents a summary of earlier studies related to mobile banking, customer satisfaction, and user perception. It identifies key factors influencing the adoption and usage of mobile banking services, including service quality, security, ease of use, and trust. Analyzing prior research helps in recognizing existing gaps and establishes a strong foundation for the current study on factors affecting customer satisfaction with mobile banking services in nationalised banks.

Studies by Karan Dinesh Sagar (2023) indicate that public sector banks lag behind private banks in terms of digital efficiency and responsiveness, which directly affects customer satisfaction. This finding aligns with Neha Kashyap (2022), who observed that while customers of nationalised banks show moderate satisfaction, they expect improvements in mobile banking services, especially in terms of speed and support. These studies directly support the need for this research to evaluate satisfaction levels specifically within nationalised banks.

Service quality has been widely recognized as a critical determinant of satisfaction. G. Bright Jowerts (2017) emphasized that reliability, responsiveness, and assurance significantly influence customer perceptions. Similarly, T. Partha Saradhy et al. (2014) highlighted the importance of Customer Relationship Management (CRM) in understanding customer expectations and improving satisfaction.

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These insights are directly linked to this study's focus on service quality variables such as system reliability and grievance redressal.

Technological factors also play a vital role. P. S. Aithal and K. V. M. Varambally (2015) identified mobile banking as a tool for financial inclusion but stressed the importance of ease of use and accessibility. Supporting this, Singh et al. (2019) found that convenience and user-friendly interfaces significantly enhance customer satisfaction. Gupta and Arora (2020) further noted that transaction speed and application performance are key contributors to a positive user experience. These findings justify the inclusion of usability and efficiency variables in the present research.

Security and trust are equally important in influencing customer satisfaction. Sharma and Malhotra (2018) found that perceived security and privacy concerns significantly impact user trust in mobile banking platforms. This is reinforced by Kumar and Nair (2021), who highlighted that effective grievance redressal systems, particularly for failed transactions, are essential for maintaining customer confidence. These studies directly relate to the research variables of security and responsiveness.

Demographic and behavioral factors also influence satisfaction levels. Reddy and Kumar (2020) observed that age, education, and digital literacy affect the adoption and perception of mobile banking services. Patel and Jain (2021) further emphasized that lack of digital awareness, especially in rural areas, limits customer satisfaction despite the availability of services. These findings support the need to consider user diversity in this study.

Overall, the literature suggests that customer satisfaction in mobile banking is a multidimensional construct influenced by service quality, technological efficiency, security, and user-related factors. However, there is limited research focusing specifically on nationalised banks in India, creating a gap that this study aims to address by providing a comprehensive analysis of the factors influencing customer satisfaction.

Research Gap

- There is limited research specifically focused on nationalised banks, as most studies either compare public and private sector banks or primarily emphasize private banks, leading to a lack of in-depth analysis of customer satisfaction in nationalised banks.
- Existing literature does not provide a comprehensive approach, as key factors such as service quality, security, usability, reliability, responsiveness, and technological efficiency are often studied separately rather than in an integrated manner.
- Many studies are institution-focused rather than user-centric, resulting in insufficient understanding of actual customer perceptions, expectations, and experiences with mobile banking services.
- While mobile banking adoption has been widely researched, there is a significant gap in studies focusing on post-adoption customer satisfaction and its key determinants, which are essential for ensuring continued usage and long-term success.

Objectives of the Study

- To identify and analyze the key factors influencing customer satisfaction with mobile banking services offered by nationalised banks in India.
- To examine the impact of service quality dimensions such as ease of use, security, reliability, responsiveness, and transaction speed on customer satisfaction with mobile banking services.
- To evaluate customer perceptions regarding security, trust, and technological performance of mobile banking services in nationalised banks.

III. Research Methodology

1. Research Design

This study adopts a descriptive and analytical research design to examine the factors influencing customer satisfaction with mobile banking services in nationalised banks in India. The design helps in systematically analyzing customer perceptions, experiences, and satisfaction levels.

2. Research Approach

A quantitative research approach is used, as the study relies on numerical data collected through structured close ended questionnaires and statistical analysis to identify relationships between variables.

3. Data Collection Method

Primary Data: Primary data is collected through a structured questionnaire from mobile banking users of nationalised banks. It includes factors like usability, security, and service quality, measured using a 5-point Likert scale. Data is gathered through convenience sampling (Google Forms) from 200 respondents to capture real customer insights.

4. Sampling Method

Sampling Technique: The study uses a non-probability convenience sampling technique to collect data from easily accessible respondents.

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Sampling Unit: The sampling unit consists of individual customers using mobile banking services of nationalised banks such as the State Bank of India, Punjab National Bank, and Bank of Baroda.

Sample Size: A total sample size of 200 respondents is selected to ensure reliable statistical analysis.

Sample Area: The study is conducted in urban and semi-urban areas, where users have better access to smartphones and internet services. This approach enables efficient data collection and provides relevant insights into customer satisfaction with mobile banking services.

5. Tools for Data Collection

Survey: The satisfaction levels regarding mobile banking services offered by nationalised banks among the population will be measured by a structured questionnaire in the form of a 5-point Likert Scale (Strongly Disagree to Strongly Agree).

6. Plan of Analysis

Collected data will be organized, classified, and tabulated systematically. Descriptive statistics will summarize demographic details. Correlation and regression analysis will examine relationships between variables affecting customer satisfaction. MS Excel will be used for basic analysis, while SPSS will apply Pearson's Correlation and Multiple Regression to test hypotheses and determine significance.

Hypothesis

1. H_{01}: There is no significant relationship between ease of use of mobile banking applications and customer satisfaction with mobile banking services in nationalised banks.

   H_1: There is a significant relationship between ease of use of mobile banking applications and customer satisfaction with mobile banking services in nationalised banks.
2. H_{02}: There is no significant impact of perceived security and privacy on customer satisfaction with mobile banking services offered by nationalised banks.

   H_2: There is a significant impact of perceived security and privacy on customer satisfaction with mobile banking services offered by nationalised banks.
3. H_{03}: There is no significant relationship between service quality dimensions (reliability, responsiveness, and transaction speed) and customer satisfaction with mobile banking services in nationalised banks.

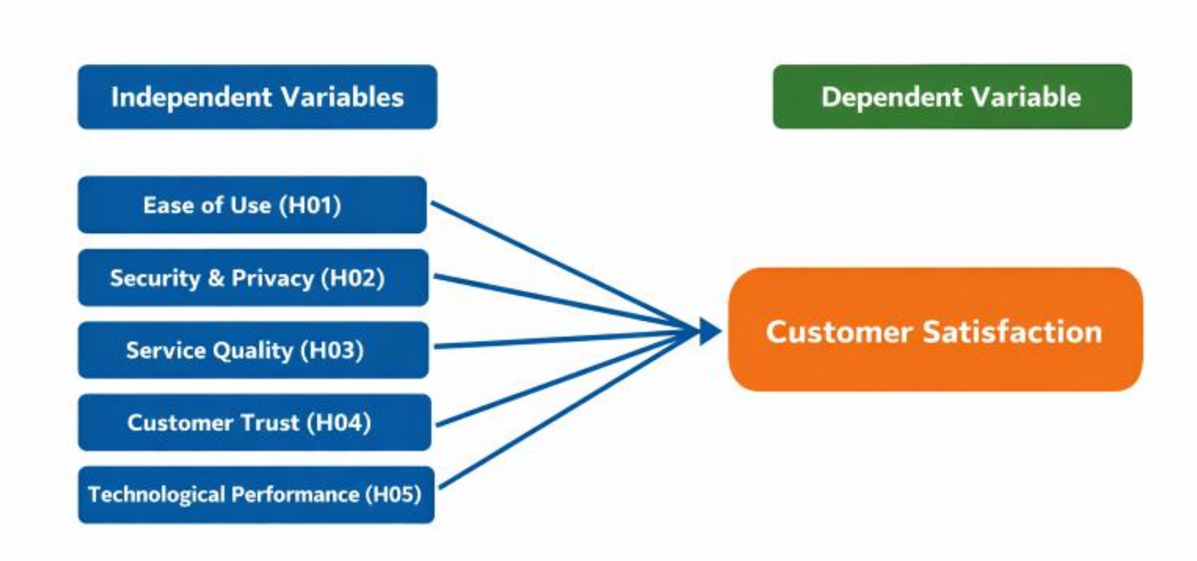
   H_3: There is a significant relationship between service quality dimensions (reliability, responsiveness, and transaction speed) and customer satisfaction with mobile banking services in nationalised banks.
4. H_{04}: There is no significant relationship between customer trust and overall customer satisfaction in nationalised banks.

   H_4: There is a significant relationship between customer trust and overall customer satisfaction in nationalised banks.
5. H_{05}: There is no significant relationship between perceived technological performance of mobile banking applications and overall customer satisfaction in nationalised banks.

   H_5: There is a significant relationship between perceived technological performance of mobile banking applications and overall customer satisfaction in nationalised banks.

IV. Conceptual Framework

This conceptual framework highlights the key factors influencing customer satisfaction with mobile banking services in nationalised banks in India. Ease of use, security and privacy, and service quality enhance user experience and convenience. Customer trust strengthens confidence in digital banking, while perceived technological performance ensures smooth and efficient functioning of applications. Together, these factors shape customer perceptions and overall satisfaction, indicating that improvements in these areas can significantly enhance customer satisfaction with mobile banking services.



V. Data Analysis And Interpretation

Independent Variables:

- *Ease of use:* This reflects how easily customers operate mobile banking apps.
- *Perceived security and privacy:* This indicate confidence in transaction safety and data protection.
- *Service quality:* This includes reliability, responsiveness, and transaction speed.
- *Customer trust:* This represents belief in the bank's credibility and services.
- *Perceived technological performance:* This measures app efficiency, speed, and system reliability.

Dependent Variable:

Customer satisfaction: This represents the overall evaluation of mobile banking services provided by nationalised banks. It reflects how well these services meet customer expectations. Higher satisfaction leads to continued usage and positive perception of mobile banking services.

Regression Analysis

Variables Entered / Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Service_Quality, Tech_Performance, Security, Ease_Use, Trust[b]	.	Enter

a. Dependent Variable: Satisfaction

b. All requested variables entered.

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Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.726[a]	.526	.514	.64150

a. Predictors: (Constant), Service_Quality, Tech_Performance, Security, Ease_Use, Trust

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	88.759	5	17.752	43.136	.000[b]
	Residual	79.836	194	.412		
	Total	168.595	199			

a. *Dependent Variable: Satisfaction*
b. *Predictors:(Constant),Service_Quality,Tech_Performance,Security,Ease_Use,Trust*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.177	.293		-.606	.545
	Ease_Use	.069	.125	.056	.553	.581
	Security	.119	.127	.088	.931	.353
	Tech_Performance	.241	.110	.183	2.192	.030
	Trust	.365	.130	.289	2.811	.005
	Service_Quality	.235	.117	.183	2.017	.045

a. Dependent Variable: Satisfaction

Interpretation

The regression analysis examines the impact of independent variables—Ease of Use, Security, Technology Performance, Trust, and Service Quality—on customer satisfaction with mobile banking services in nationalised banks. The model summary shows an R value of 0.726, indicating a strong positive relationship between the variables. The R^2 value of 0.526 implies that approximately 52.6% of the variation in customer satisfaction is explained by these factors, reflecting a good model fit.

The ANOVA results ($F = 43.136$, $p < 0.001$) indicate that the overall regression model is statistically significant, confirming that the selected variables collectively influence customer satisfaction.

From the coefficients table, Trust ($\beta = 0.289$, $p = 0.005$) has the strongest and most significant positive impact on satisfaction, followed by Technology Performance ($\beta = 0.183$, $p = 0.030$) and Service Quality ($\beta = 0.183$, $p = 0.045$). These variables significantly contribute to improving customer satisfaction. However, Ease of Use ($p = 0.581$) and Security ($p = 0.353$) are not statistically significant, suggesting that they do not have a strong independent effect in this model.

Overall, the findings highlight that trust, efficient technology, and quality service are key drivers of customer satisfaction in mobile banking.

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Correlation

Correlations

Control Variables			Ease_Use	Security	Tech_Performance
Satisfaction	Ease_Use	Correlation	1.000	.675	.565
		Significance (2-tailed)	.	.000	.000
		df	0	197	197
	Security	Correlation	.675	1.000	.533
		Significance (2-tailed)	.000	.	.000
		df	197	0	197
	Tech_Performance	Correlation	.565	.533	1.000
		Significance (2-tailed)	.000	.000	.
		df	197	197	0
	Trust	Correlation	.689	.632	.577
		Significance (2-tailed)	.000	.000	.000
		df	197	197	197
	Service_Quality	Correlation	.614	.599	.529
		Significance (2-tailed)	.000	.000	.000
		df	197	197	197

Correlations

Control Variables			Trust	Service_Quality
Satisfaction	Ease_Use	Correlation	.689	.614
		Significance(2-tailed)	.000	.000
		df	197	197
	Security	Correlation	.632	.599
		Significance(2-tailed)	.000	.000
		df	197	197
	Tech_Performance	Correlation	.577	.529
		Significance(2-tailed)	.000	.000
		df	197	197
	Trust	Correlation	1.000	.614
		Significance(2-tailed)	.	.000
		df	0	197
	Service_Quality	Correlation	.614	1.000
		Significance(2-tailed)	.000	.
		df	197	0

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Interpretation

The analysis reveals a strong and positive relationship between the independent variables and customer satisfaction with mobile banking services. The correlation results indicate that ease of use, security, technological performance, customer trust, and service quality are all significantly correlated with customer satisfaction, with significance values ($p < 0.05$). This suggests that improvements in these factors are associated with higher levels of satisfaction among users.

The regression analysis further supports these findings. The model summary shows an R^2 value of 0.526, indicating that approximately 52.6% of the variation in customer satisfaction is explained by the selected independent variables.

The ANOVA results confirm that the overall model is statistically significant ($p = 0.000$), validating the reliability of the model.

From the coefficients table, customer trust ($\beta = 0.289$, $p = 0.005$), technological performance ($\beta = 0.183$, $p = 0.030$), and service quality ($\beta = 0.183$, $p = 0.045$) have a significant positive impact on customer satisfaction. Ease of use and security, although positively related, are not statistically significant. Therefore, hypotheses related to trust, technological performance, and service quality are strongly supported, indicating their critical role in influencing customer satisfaction.

Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Ease_Use	200	2.25	5.00	3.9788	.74970
Security	200	2.25	5.00	4.0300	.68158
Service_Quality	200	2.25	5.00	4.0138	.71383
Trust	200	2.25	5.00	4.0275	.72673
Tech_Performance	200	2.00	5.00	3.9967	.69856
Satisfaction	200	2.00	5.00	3.9550	.92044
Valid N (listwise)	200				

Interpretation

The descriptive statistics provide an overview of respondents' perceptions regarding mobile banking services in nationalised banks. The mean values for all variables are close to 4, indicating that most respondents generally agree with the statements related to ease of use, security, service quality, trust, technological performance, and overall satisfaction.

Ease of use has a mean value of 3.98, suggesting that users find mobile banking applications easy to operate. Security shows a slightly higher mean of 4.03, indicating strong confidence in transaction safety and data protection.

Service quality (mean = 4.01) reflects that customers perceive banking services as reliable and efficient. Similarly, customer trust (mean = 4.03) highlights a high level of confidence in the bank's digital services.

Technological performance has a mean of 3.99, indicating that the applications perform efficiently with minimal issues. Customer satisfaction has a mean of 3.96, showing overall positive user experience.

The standard deviation values are relatively low (around 0.6–0.9), indicating consistency in responses. Overall, the results suggest a favorable perception of mobile banking services among customers.

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Reliability

Case Processing Summary

		N	%
Cases	Valid	200	100.0
	Excluded[a]	0	.0
	Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.938	6

The reliability analysis shows excellent internal consistency among the six variables (Cronbach's Alpha = 0.938), indicating that the items strongly measure the same underlying construct. With 200 valid responses and no missing data, the scale is highly reliable, suggesting that results derived from these variables are consistent, stable, and suitable for further statistical analysis.

VI. Findings Of The Study

- The reliability analysis indicates a Cronbach's Alpha value of 0.938, demonstrating excellent internal consistency among the variables. This confirms that the measurement scale used in the study is highly reliable and suitable for analyzing customer satisfaction with mobile banking services.
- The descriptive statistics reveal that the mean values of all variables are close to 4, indicating that respondents generally agree with the statements related to ease of use, security, service quality, trust, technological performance, and satisfaction. This reflects a positive perception and satisfactory experience among users of mobile banking services.
- The correlation analysis shows that all independent variables have a positive and statistically significant relationship with customer satisfaction ($p < 0.05$). This suggests that improvements in these factors are associated with an increase in customer satisfaction levels.
- The regression analysis indicates an R value of 0.726 and an R^2 value of 0.526. This implies that approximately 52.6% of the variation in customer satisfaction is explained by the selected independent variables, demonstrating a good fit and strong explanatory power of the model.
- The ANOVA results ($F = 43.136$, $p < 0.001$) confirm that the regression model is statistically significant. This indicates that the independent variables collectively have a meaningful impact on customer satisfaction with mobile banking services.
- Customer trust emerges as the most significant predictor of satisfaction ($\beta = 0.289$, $p = 0.005$). This finding highlights that trust plays a crucial role in shaping customer perceptions and overall satisfaction with mobile banking services.
- Technological performance ($\beta = 0.183$, $p = 0.030$) and service quality ($\beta = 0.183$, $p = 0.045$) are also found to have a significant positive impact on customer satisfaction. Efficient system performance and quality service delivery enhance the user experience and contribute to higher satisfaction levels.
- Although ease of use and security are positively related to customer satisfaction, they are not statistically significant in the regression model. This suggests that these factors may be considered basic requirements by customers rather than key differentiators influencing satisfaction.

- The relatively low standard deviation values indicate consistency in responses among the participants. This reflects a stable pattern in customer perceptions regarding mobile banking services.

The study concludes that customer satisfaction in mobile banking services of nationalised banks is primarily driven by trust, technological performance, and service quality. While ease of use and security remain important, they function more as foundational factors rather than primary drivers of satisfaction.

VII. Suggestions

- Strengthen customer trust by ensuring transparency, minimizing transaction errors, and providing consistent and reliable services. Quick issue resolution and clear communication will enhance customer confidence.
- Improve technological performance by investing in robust IT infrastructure to ensure faster transactions, minimal downtime, and smooth app functioning through regular updates and maintenance.
- Enhance service quality by offering responsive and reliable customer support, including 24/7 assistance and efficient grievance redressal systems to address customer issues promptly.
- Focus on user-friendly design by simplifying app navigation, improving accessibility, and providing multilingual support to cater to diverse users, including less tech-savvy individuals.
- Strengthen security measures by implementing advanced technologies such as biometric authentication and encryption, along with creating awareness about safe mobile banking practices.
- Provide personalized services such as customized alerts and financial insights to improve customer engagement and satisfaction.
- Promote digital literacy through training programs and tutorials, especially in semi-urban and rural areas, to increase adoption and effective use of mobile banking services.
- Develop an efficient grievance redressal mechanism with real-time complaint tracking and faster resolution to improve customer experience.
- Expand mobile banking features by incorporating innovations such as AI-based chatbots, voice banking, and seamless payment integrations for better convenience.
- Continuously collect customer feedback through surveys and app reviews to identify areas of improvement and align services with customer expectations.
- Adopt a customer-centric and technology-driven approach focusing on trust, efficiency, and service quality to ensure long-term satisfaction and sustained usage of mobile banking services.

VIII. Conclusion

The study examines the key factors influencing customer satisfaction with mobile banking services in nationalised banks in India. The findings reveal that customers generally have a positive perception of mobile banking, with satisfactory levels of ease of use, security, service quality, trust, and technological performance. The high reliability of the data confirms the consistency and validity of the results.

The analysis highlights that customer satisfaction is significantly influenced by trust, technological performance, and service quality. Among these, trust emerges as the most critical factor, indicating that customers prioritize reliability and confidence in banking services. Technological efficiency and quality service delivery also play a vital role in enhancing user experience. Although ease of use and security are positively related to satisfaction, they do not significantly impact it independently, suggesting that they are considered basic expectations by users.

Overall, the study concludes that improving trust, ensuring efficient technological performance, and delivering high-quality services are essential for enhancing customer satisfaction. Nationalised banks must adopt a customer-centric and technology-driven approach to remain competitive. Continuous innovation, improved service delivery, and focus on customer needs will not only enhance satisfaction but also encourage greater adoption and long-term usage of mobile banking services.

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