



Remote Banking in the Digital Age: Transforming Customer Experience, Security and Financial Inclusion

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Abstract

The Indian banking system serves as the cornerstone of the nation's financial framework, playing a vital role in driving economic progress. By mobilizing and allocating capital, it fuels investment and promotes stability, laying the foundation for sustainable growth. Through initiatives of digital banking systems the banking customers are utilizing its immense services and facilities. The major focus of this study was to understand the role of remote banking, investigating the experience of customers with remote banking services, security measures taken by remote banking service providers. The study also strived to check out the role of remote banking services in bringing inclusive growth. A total of 82 respondents have been selected for the study on random sampling basis. A structured online survey questionnaire has been prepared to gather qualitative inputs from the respondents.

Keywords: Remote Banking, Role of RB in Transforming Customers Experience and Security.

Introduction

In today's digital era, remote banking has transformed the landscape of financial management, offering individuals convenient and secure access to banking services anytime, anywhere. It has evolved into a cornerstone of modern banking, providing users with a diverse array of features and capabilities to effortlessly handle transactions and oversee their accounts. No longer are individuals confined to waiting in lengthy queues at bank branches or constrained by the limitations of traditional banking hours. Remote banking has liberated customers from these constraints, allowing them to seamlessly manage their finances. Whether from the comfort of their homes or while on the move, users can effortlessly perform tasks such as checking account balances, transferring funds between accounts, paying bills, depositing checks, and much more—all with the convenience of their smart phones, and tablets, or computers.

Review of Literature: The author explores the growing functionalities of remote banking systems and emphasizes the need for robust security measures to accompany remote identification, offering insights into assessing banking service efficacy and developing solutions for remote banking services¹. The study's purpose is to validate and quantify the viability of banks transitioning to new information processing and transmission methods, driven by the evolving theoretical and methodological foundations of remote banking services amidst digitalization and constant innovation in information services within the banking sector². The article highlights the potential benefits of integrating modern FinTech products into banking systems, projecting increased customer attraction, revenue growth, and cost reduction.

Additionally, it delves into the author's perspectives on risk management, exploring its implications on the ecosystem, recent trends in electronic banking risks, and strategies for managing risks associated with remote banking services³. The paper aims to examine the relationship between online banking service practices and e-customer satisfaction, as well as e-customer loyalty, while also exploring the mediating effect of e-satisfaction⁴. It utilizes exploratory factor analysis to validate online banking service quality dimensions and employs structural equation modeling to estimate parameters and structure within the study⁵.

The article underscores the significance of remote banking customer service systems in modern banking sector development, highlighting their role in enhancing service levels. Such systems not only boost a bank's performance metrics and reduce costs without compromising product quality but also crucially expand the customer base, particularly vital in competitive markets⁶.

The study could carried out to evaluate the impact of banking service quality on customer satisfaction about remote banking services offered by various banks in Tamil Nadu, also, studied the various factors influencing the satisfaction of customers towards remote banking services⁷. The author seeks to establish and validate a scale measuring perceived quality in e-banking services. Through web-based questionnaires administered to 335 respondents from Slovenia and Croatia, the study employs exploratory and confirmatory factor analyses to evaluate content, construct, dimensionality, and discriminate validity. The results affirm the instrument's suitability for assessing perceived quality in e-banking services⁸.

Need for the Study: Remote banking in digital age is very crucial for understanding its impact on the experience and security of the customers and inclusive growth of underserved and all other beneficiaries. Remote banking adapts innovative strategies to attract customers and satisfy them. With digital advancements the Indian banking system reshaping its operations and trying to build interaction between customers and offering easy accessibility to everybody. Hence, the present study aims to understand how remote banking system is impacting on customers' experience, their security and financial inclusion.

Objectives of the Study: i. To investigate the influence of remote banking services on the experience and security of customers, ii. To evaluate the role of remote banking services in strengthening the financial inclusion.

Hypothesis: i. $H_{0,1}$: Remote Banking does not influence on the experience and security and customers, ii. $H_{1,1}$: Remote Banking have influence on the experience and security and customers, iii. $H_{0,2}$: Remote Banking does not play a pivotal role in strengthening the financial inclusion, iv. $H_{1,2}$: Remote Banking playing a pivotal role in strengthening the financial inclusion.

Methodology

The present study is descriptive and empirical in nature. Descriptive method have been applied to study the inherent features of remote banking system and empirical research method could be applied to evaluate its impact on customers experience and security measures taken by banking sector to safeguard the interest of customers. And to investigate the role of remote banking services in inclusive growth. Both the primary and secondary data has been used in this study.

The primary data for evaluation has been collected through well structured online questionnaire and secondary data was collected through various research papers, and published articles. Sample size for the study is 82 and this was selected based on random sampling method.

Scope of the Study: The study encompasses investigating the influence of remote banking system on personal experience of the customers and their security focusing in digital advancement in banking sector. Various factors have been covered in the study to evaluate the effect of remote banking such as frequency and mode of using remote banking services, major reasons for using remote banking services, factors which influence customers experience, security level of trust and financial inclusion.

Understanding the Customer Experience, Security and Financial Inclusion through Remote Banking

The study found that majority (53.7%) of the female respondents has been participated in the online survey whereas

male participants are N-35 (42.7%). 84.1% of the respondent's age is in the age group of 20-30 which elaborates the majority of the youngsters have been participated in the study. 56.1% of the respondents are from rural background, and 37.8% from urban background, this explains that the people from rural as well as urban is eagerly uses the remote banking services.

Table-1: Represents the Demographical Profile of the Respondents.

Demographic Profile of Respondents		Frequency	%	N
Gender	Male	35	42.7	82
	Female	47	57.3	
Age	20-30	69	84.1	82
	30-40	10	12.2	
	40 & above	3	3.7	
Residential status	Rural	46	56.1	82
	Semi-Urban	5	6.1	
	Urban	31	37.8	
Education Qualification	Graduate	4	4.9	82
	Post Graduate	78	95.1	
Annual Income	Below 1L	50	61.0	82
	1-3 L	16	19.5	
	3-6L	5	6.1	
	6L & Above	11	13.4	

Majority (95.1%) of the respondents are post graduated and 61% of the respondent's annual income is below Rs 1 Lakh 19.5% of the respondents having annual income of Rs. 1 to 3 Lakhs. Hence, majority of the participants are youngsters and using remote banking services.

Table-2 indicates the frequency of using remote banking services. 31.7% of the respondents are rarely using the internet banking services, 25.6% are using daily for doing their banking transactions. 50% of the respondents are using mobile banking services daily and 20% are using weekly. Very few percent of the respondents are using ATMs and smart cards regularly (i.e. 12.2% & 8.5% respectively). 57.3% of the respondents are using UPI services daily and 17.1% are using the same rarely. With the overall results of the above table it is concluded that most of the respondents are using UPI and mobile banking services to handle their banking activities.

The results of the above indicate that remote banking channels primarily using by the respondents. Majority (50% & 31.7%) of the respondents are primarily using UPI and mobile banking channels to deal with their regular banking activities (Table-3).

Table-2: Represents the Frequency of Using Remote Banking Services.

	Daily		Weekly		Monthly		Rarely		Never		Total
	F	%	F	%	F	%	F	%	F	%	N (%)
Internet Banking	21	25.6	13	15.9	19	23.2	26	31.7	3	3.7	82(100%)
Mobile Banking	41	50.0	16	19.5	13	15.9	10	12.2	2	2.4	82(100%)
ATM Services	10	12.2	22	26.8	24	29.3	22	26.8	4	4.9	82(100%)
Smart Cards	7	8.5	14	17.1	13	15.9	34	41.5	14	17.1	82(100%)
UPI	47	57.3	11	13.4	5	6.1	14	17.1	5	6.1	82(100%)

Table-3: Represents the Remote Banking Channel Primarily Using by the Respondents.

UPI		Internet Banking		Mobile Banking		ATM	
F	%	F	%	F	%	F	%
41	50.0	5	6.1	26	31.7	10	12.2

Table-4: Exhibits the Main Reasons for Using Remote Banking Services.

Reasons	Agree		Neutral		Disagree		N [%]	\bar{x}	σ
	F	%	F	%	F	%			
R1	73	89.0	7	8.5	2	2.4	82 [100%]	1.134	0.563
R2	73	89.0	7	8.5	2	2.4	82 [100%]	1.134	0.563
R3	78	95.1	2	2.4	2	2.4	82 [100%]	1.073	0.442
R4	58	70.7	22	26.8	2	2.4	82 [100%]	1.317	0.826
R5	43	52.4	32	39.0	7	8.5	82 [100%]	1.561	1.137
R6	62	75.6	19	23.2	1	1.2	82 [100%]	1.256	0.733
R7	63	76.8	10	12.2	9	11.0	82 [100%]	1.341	0.950
R8	47	57.3	27	32.9	8	9.8	82 [100%]	1.524	1.115
R9	39	47.6	32	39.0	11	13.4	82 [100%]	1.659	1.259

Table-5: Exhibits the Main Reasons for Using Remote Banking Services.

R1	Convenience	R6	Access to more services
R2	24/7 Access	R7	Real time information of transaction history & A/c activity
R3	Time Saving	R8	Financial advice based on customers spending habit
R4	Cost Effective	R9	Others
R5	Encryption & Multi Factor/Biometric Authentication		

The above Table-4 indicates the reason for using remote banking services. 89% of the respondents are using RBS as the RBS facilitates convenience and offers 24/7 access to the bank accounts with \bar{x} is 1.134 and $\sigma = 0.563$. 95% of the respondents agreeing that time saving feature of the RBS are the main reasons to use RBS with \bar{x} is 1.073 and $\sigma = 0.442$. 70.7%, 75.6% & 76.8% of the respondents agreeing that cost effective feature, accessing to various facilities and getting real time information of transaction history and A/c activity are the major reasons to use RBS respectively. 52% of the respondents are agreeing that encryption and multi factor authentication as the reason to use RBS with \bar{x} is 1.561 and $\sigma = 1.137$, which shows that other 48% of the respondents have not much trust over the security of the RBS channels. Form the overall results it is concluded that majority of the respondents are agreed and opined that they are using RBS as it offers convenience, 24/7 access, time savings, and cost effective reasons.

The results of above Table-6 are indicating that the experience of the customers towards remote banking services. \bar{x} is 1.561 and $\sigma = 1.158$ explains that 89% of the respondents satisfied and strongly satisfied with cardless deposit/withdrawal facility, \bar{x} is

2.122 and $\sigma = 1.739$ depicts that 68% are satisfied with electronic FD/RD, 61% are satisfied with the feature of investing in mutual funds, 65% are satisfied with the facility to participate in IPOs, and majority are satisfied with the facilities such as hotel booking, bus/flight booking, DTH/mobile booking, and account management. From the overall results it is showing that 77% of the respondents are satisfied with the remote banking services, which indicates everyone (except very few) are satisfied with all the services offered by the remote banking systems.

The Table-8 indicates security measures taken by the remote banking service providers. The overall results showing that 86.2% of the respondents are agreed that the remote banking service provider is facilitating various security measures to safeguard the interest of customers such as encrypted login process, multi factor authentication, fingerprint scanning, fraud detection systems, regular security updates with \bar{x} is 1.138 and $\sigma = 0.504$. The results of the Table-8 indicates majority of the respondents are agreed and opined that with the help of remote banking services one can easily do his banking transactions as per his convenience.

Table-6: Exhibits the Level of Satisfaction and Experience of the Respondents towards Remote Banking Services.

Factors	Strongly Satisfied		Satisfied		Neutral		Dissatisfied		Strongly Dissatisfied		N [%]	\bar{x}	σ
	F	%	F	%	F	%	F	%	F	%			
F1	45	54.9	28	34.1	9	11.0	0	0.0	0	0.0	82 [100%]	1.561	1.158
F2	19	23.2	37	45.1	23	28.0	3	3.7	0	0.0	82 [100%]	2.122	1.739
F3	20	24.4	30	36.6	26	31.7	6	7.3	0	0.0	82 [100%]	2.220	1.874
F4	17	20.7	31	37.8	26	31.7	7	8.5	1	1.2	82 [100%]	2.317	1.982
F5	25	30.5	33	40.2	19	23.2	5	6.1	0	0.0	82 [100%]	2.049	1.711
F6	39	47.6	30	36.6	10	12.2	3	3.7	0	0.0	82 [100%]	1.720	1.379
F7	58	70.7	17	20.7	5	6.1	1	1.2	1	1.2	82 [100%]	1.415	1.082
F8	39	47.6	33	40.2	9	11.0	0	0.0	1	1.2	82 [100%]	1.671	1.307
F9	45	54.9	22	26.8	12	14.6	2	2.4	1	1.2	82 [100%]	1.683	1.397
Overall Results		41.6		35.4		18.8		3.7		0.5	82 [100%]		

Table-7: Factors Determining Satisfaction & Experience of the Respondents.

F1	Cardless deposit/withdrawal	F6	Bus/Flight Booking
F2	E-FD/RD	F7	DTH/Mobile Recharge
F3	Investment in Mutual Funds	F8	Account Management
F4	Participating in IPO	F9	Transfer Funds through NEFT or RTGS
F5	Hotel Booking		

Table-8: Exhibits Security Measures taken by Remote Banking Systems.

Security Measures	Yes		No		N	\bar{x}	σ
	F	%	F	%			
SM1	74	90.2	8	9.8	82 [100%]	1.098	0.442
SM2	76	92.7	6	7.3	82 [100%]	1.073	0.383
SM3	77	93.9	5	6.1	82 [100%]	1.061	0.349
SM4	61	74.4	21	25.6	82 [100%]	1.256	0.716
SM5	66	80.5	16	19.5	82 [100%]	1.195	0.625
SM6	64	78.0	18	22.0	82 [100%]	1.220	0.663
SM7	77	93.9	5	6.1	82 [100%]	1.061	0.349
SM8		86.2		13.8	82 [100%]	1.138	0.504

Table-9: Security Measures taken by Remote Banking Systems.

SM1	Encrypted Login Process	SM5	Fraud Detection Systems
SM2	Multi Factor Authentication such as Password & OTPs	SM6	Session Timeout Mechanisms
SM3	Fingerprint Scanning or Facial Recognition	SM7	Regular Security Updates
SM4	Location Recognition	SM8	Overall Results

Table-10: Represents Contribution of Remote Banking towards Financial Inclusion.

Remote Banking Services Facilitating FI*	Agree		Neutral		Disagree		N	\bar{x}	σ
	F	%	F	%	F	%			
FI1	59	72	22	27	1	1	82 [100%]	1.293	0.781
FI2	48	58	30	37	4	5	82 [100%]	1.463	1.012
FI3	62	76	18	22	2	2	82 [100%]	1.268	0.765
FI4	41	50	39	48	2	2	82 [100%]	1.524	1.048
FI5	62	76	17	21	3	4	82 [100%]	1.280	0.796
FI6	58	71	22	27	2	2	82 [100%]	1.317	0.826
FI7	70	85	11	13	1	1	82 [100%]	1.159	0.584

Table-11: Remote Banking Services facilitating Financial Inclusion.

F1	Community Engagement & Empowerment	F5	Credit Scoring Facility
F2	Benefits of Govt. Assisted Programs	F6	Assistance of Micro Finance & Digital Payments
F3	Utility Bill Payments	F7	Financial Education & Awareness
F4	Access to Banking Services		

The results of the Table-11 indicate the role of remote banking in bringing financial inclusion to both served and underserved community. \bar{x} is 1.293 and $\sigma = 0.781$ explains that 72% of the respondents were agreed and opined that remote banking offers various facilities to engage and empower the community in terms financial education. \bar{x} is 1.268 and $\sigma = 0.765$ elaborates that 76% of the respondents agreed that they will pay utility bill through remote banking services. 50% of the respondents using remote banking services to get and check their credit scores online. \bar{x} is 1.317 and $\sigma = 0.826$ explains that 71% of the respondents were agreed that remote banking services are assisting the underserved community to get benefits of online banking services to deal with regular banking transactions without going/visiting bank branch.

Major Findings of the Study: i. The study majorly found that majority (25.6%) are using remote banking services daily for doing their banking transactions. 50% of the respondents are using mobile banking services daily, which shows that customers are feeling very safe and secure while using remote banking services. ii. The results found that most (50% & 31.7%) of the respondents are primarily using UPI and mobile banking channels to deal with their regular banking activities. iii. The study found that 89% of the respondents are using RBS as the RBS facilitates convenience and offers 24/7 access to the bank accounts. Most of the respondents were agreeing that time saving feature of the RBS are the main reasons to use RBS. 70.7%, 75.6% & 76.8% of the respondents agreeing that cost effective feature, accessing to various facilities and getting real time information of transaction history and A/c activity are the major reasons to use RBS respectively. iv. The study found that the customers are very happy and satisfied about various features of remote banking services such as electronic FD/RD, investing in mutual funds, hotel/bus/flight booking, DTH/mobile recharge and etc. v. The study highlights that the remote banking service providers were offering various security measures to safeguard the interest of customers. Such as multi factor authentication, fingerprint scanning, passwords and OTPs, session timeout mechanisms etc.

Conclusion

Remote banking is one the major initiations taken by the banking sector in India as well in globe. This facilitates the customers to do banking transaction without visiting bank branch. The remote banking service provides flexibility to customers handle their bank account themselves. The study was intended to investigate the role of remote banking services in bringing good experience, security and financial inclusion. The study reveals that 89% of respondents use Remote Banking Services (RBS) primarily for convenience, offering 24/7 access. They cite time-saving as the main reason, with 70.7%, 75.6%, and 76.8% citing cost-effectiveness, access to various facilities, and real-time transaction information, respectively. Customers express satisfaction with features like electronic FD/RD, mutual fund investment, and booking services. Furthermore, remote

banking providers employ security measures such as multi-factor authentication, fingerprint scanning, passwords, OTPs, and session timeout mechanisms to protect customer interests.

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