

A study on the Role of Self-Service Technologies in Enhancing Relationship Marketing in Commercial Banks.

Tresena Machado C¹, Dr. S Daniel David Annaraj², Dr. Rekha Sharma³, Dr. Juhi Puri Desai⁴, Dr. Ojas Basavaraj Hanchanale⁵, Dr. Nasir Gulzar Mugloo⁶

¹Dept. of Commerce, St. John's College, Palayamkottai. University, Abishekapatti, Tirunelveli –627 012.

Email ID : tresenamachado@gmail.com

²Assistant Professor, Dept. of Commerce, St. John's College, Palayamkottai. University, Abishekapatti, Tirunelveli –627 012

Email ID : sdanieldavidannaraj@gmail.com

Cite this paper as: Tresena Machado C, Dr. S Daniel David Annaraj, Dr. Rekha Sharma, Dr. Juhi Puri Desai, Dr. Ojas Basavaraj Hanchanale, Dr. Nasir Gulzar Mugloo, (2025) A study on the Role of Self-Service Technologies in Enhancing Relationship Marketing in Commercial Banks.... *Journal of Neonatal Surgery*, 14 (32s), 9234-9240.

ABSTRACT

The digital era is witnessing a shift in paradigm from service-based economy towards self-service economy. Technology has been proactively penetrating into organisations and plays a crucial role in upgrading the operational efficiency and enhancing user experience. To catch up with the winds of changing times, banks are constantly evolving and expanding their self-service banking solutions. The widespread use of digital payments and mobile/internet banking has made banking services accessible and convenient for customers and has caused a shift in preference towards SST over traditional banking. The challenging factor for banks with SSB is enhancing customer relationships through these channels. The study examines the influence of SST on customer experience, satisfaction, retention and loyalty. Data for the study is collected from 80 respondents across Thoothukudi District through a structured questionnaire. The findings are that all five dimensions of SSB: Accessibility, Security, Reliability, Competence and Control have positive significant relationship with customer experience and customer satisfaction. However, the relationship of these dimensions with customer retention is insignificant.

Keywords: Self-Service Banking (SSB); Self-Service Technology (SST); Customer Relationship.

1. INTRODUCTION

Self-Service Technology (SST) refers to all technical novelties that provide the customers the independence to avail services without any kind of direct human intervention. SSTs have gained immense customer acceptance as it provides an empowering customer experience of being able to fulfil their requirements directly without any intermediaries.

SST is booming significantly in the financial sector compared to other sectors. Banks were one of the first service sectors to integrate SST in their operations; ATMs were the very first SST in banks invented in the 1960s and remain relevant till date. (SSB)

The SSB model is a mutually beneficial one for both the customers and the bank. Customers enjoy the convenience and speed of availing services round the clock, reducing the hazel of queues and waiting time. Banks benefit from the reduced cost of operations and dealing with lesser walk-ins without compromising on the volume of transactions. SSB also aids banks to effectively expediate data management and analysis. SST has led to remarkable technical innovations in the standardised financial sector.

SSB also enhances customer experience by providing highly responsive and effective services to customers. (John Serbe Marfo, 2022) In traditional offline banking methods, all banking services are rendered to customers through its staff, in which the service quality is highly dependent on personnel behaviour. Despite training and development of staff, there is variance and inconsistency in quality delivered between and within bank staffs owing to various factors which are difficult to eliminate. These factors impact customer experience, as customers perceive and evaluate service quality mostly based their interaction with staffs. (Christian.C. Ezenwafor, 2020) SST solves this shortcoming by ensuring reliable and consistent service to all customers.

Initially SST in banking was limited to ATM facilities, over the years, with the advancement in technology and the evolution of customers financial needs, has made SST an integral part of banking. The digital solutions in SSB incorporates and facilitates almost every banking service provided in traditional banking. SSB enables customers withdraw and deposit money, open new accounts, check account balance and statements, deposit cheques, transfer of funds, automate payments, reset passwords and pins, block or unblock cards, regulate transactional limits, updating profiles, authentication and authorise, solve queries and obtain information.

2. OBJECTIVES:

To study the demographic profile and SSB trends of respondents in the study area.

To analyse the relationship between SST dimensions and Relationship Marketing outcomes in banking.

3. RESEARCH METHODOLOGY:

In this study both Primary and Secondary Data have been used. Primary data is collected with the help of a structured questionnaire, 80 respondents who are customers of commercial bank in Thoothukudi district were selected through random sampling method. Secondary data has been collected through books, Journals, Websites, etc; for theoretical study. Data Analysis has been done with through percentage analysis and Pearson's (r) Correlation Analysis.

Types of SSB

Automatic telling machines (ATM): ATM's are electronic bank outlets that operate 24x7 enabling customers withdraw cash and procure mini statements. Advanced ATMs facilitate transfer of funds, cheques and cash deposits.

Internet Banking and Mobile Banking: It refers to electronic banking done through using the internet browser and mobile applications respectively. Internet banking enables customers avail banking service through bank's website, protected by a User Id and password. It covers wider range of service beyond money management like online application, investment management etc. Mobile banks enable customers access their bank accounts in the bank's mobile application; it primarily facilitates basic banking activities such as transfer of funds. The scope of banking activities carried out in internet and mobile banking depends and differs based on the bank's technical interface.

E-lobby and Digital Kiosks: E-lobby or e-lounges are an extended bank outlet where services are automated and does not require staff intervention. E-lobbies are equipped with ATM machine, a Cash Deposit Machine, a Passbook Print Facility, Cheque Drop Box, Information Kiosk and Net Banking Facility and provide one stop banking solution round the clock. Kiosk refers to a stand-alone booth or stall, either installed permanently or temporarily to provide information and service. Bank's Kiosk are set up to provide basic banking services and are commonly set up in places with limited bank access and in commercial spaces like malls for customer convenience.

Online Chatbots: Chatbots are a technological feature available in internet banking. Chatbots are designed to engage with customers in real-time and optimises customer care services. Powered by Artificial Intelligence (AI), chatbots are designed to be competent in solving queries, addressing grievances, providing information and personalising conversations.

Benefits of SSB for customers

Convenience: The value proposition of self-service technologies is convenience. It allows customers avail banking service anytime from anywhere reducing the cost of effort and time.

Accessibility: SSB has made banking easily accessible to all customers. It brings banks closer to the customer and eliminates the waiting time and gets the job done in a short period.

One Stop Solution: SST technologies combines multiple services possible in a single medium, providing holistic solutions. ATMs are equipped to dispense money, check balances, change PINs and even deposit money. Internet and mobile banking provide multiple services.

Control: SST empowers customer buy providing them the control over navigating through the process. Customers can perform their own banking activities without having to depend on the bank employees to serve them.

Accuracy: The greatest advantage of technology is the accuracy in every detail which is a must while dealing with monetary values. The possibilities of human errors are reduced in SSB.

Reliability: SSB has made banking easier and reliable. Banking activities can be done when and where needed in an instant. It facilitates immediate transfer of money reducing the need physical money.

Security: SSB is a safe and secure medium of banking, the technical infrastructure ensures high security of data and demands passwords, pin number or one-time passwords to authenticate services.

Benefits to Banks

Increased efficiency: SSB performs faster than traditional banking models, increasing the bank's capacity to handle greater

volumes of transactions. The reduced number of walk-in customers helps banks to serve customers better and prioritise other tasks. Implementing SST in banking increases bank's competence and saves cost by minimising the workforce.

Personalisation: Technology eases marketing communication by leveraging generated data. Precision in data analysis and results aid banks to offer suitable services and suggestions. SST also utilises data to deliver personalised communication for effective customer engagement and enhanced customer experience.

Challenges

Lack of Personal touch: The concept of SSB is the elimination of human intervention between the bank and customer. This results in lack of personal connection between the bank and customer increasing the strain on relationship management for banks and impacting customer experience.

Financial and Digital illiteracy: Financial and Digital illiteracy is the major barrier for SSB. Banking is a service widely used by diverse customers, all customers are not equipped with adequate facilities to access SST. Factors like age, literacy levels, lack of awareness, ignorance also contribute towards financial and digital illiteracy making SSB difficult into these segments.

Hefty Cost of Technical Infrastructure: The perks of SSB comes with a high financial obligation for the bank. The cost incurred by banks to purchase, install, maintain and update a secured IT infrastructure demands great investments. The cost saved by banks from downsizing human resources and decreasing the foot fall is forgone in technical cost. These costs reflects in the charges and interest levied by banks to customers.

Lack of Accountability: Not all customers are technology proficient, most customers are still exploring SST. Any misinterpretation of the process or even minor errors can result in monetary loss, which the banks do not assume responsibility for. Despite the banks and governing bodies spreading awareness regarding cyber security, uninformed in SST platforms for an easier target for cybercrimes.

Review of literature

Chellapalli, T. (2023) analyse the factors affecting customer experience while using SST particularly ATM services. The factors identified in the study are convince, service scape, technological interface, transactional security, speed, transactional reliability and social environment. The finding reveal that all factors except social environment were found to influence customer experience in usage of ATMs.

Dr. Vaishali Lachhwani and Harishankar Shukla (2023) in the research paper "Impact of Self-Service Technologies on Consumers" studies how self-service technology impacts consumer and how banks provide paper-less and convenient banking through a Self-service Technology linkage network between bank and consumer. ATM, Mobile and Internet banking are identified as the three major self-service channels for consumers. ATMs apart from providing primary banking service of deposit and withdrawal of money also provides informative services like balance enquire and account summary. Internet and mobile banking apart from primary and informative services also provide an array of services for customer via the internet such as opening of accounts, transfer of funds, e-wallets and bill payments. Self-service technology has both positive and negative impact on customer. The positive impact is the marginal benefit of saving time, money and energy for customers to reach the bank. The positive social benefit is it helps in the development of technical infrastructure and financial awareness. The negative impact for customer is the risk associated and the cost incurred to using self-service technology.

Pooja Sharma and Dr Sudipta Sen Gupta (2022) analyses customers Perception And Satisfaction Towards Technology Enabled Bank Services. The study tests the relationship between demographic variables such as gender, age, educational qualification, occupation, income and also the type of bank with Awareness and Satisfaction Level Towards Technology-Enabled Banking Services; all factors are found to impact awareness and satisfaction.

Dr. Khushboo Agnihotri and (Dr.) Sachin Kumar Srivastava (2019) asses the importance of Technology Adaptation Model and the various factors in determining the customers intention to use self-service technologies in banking. The finding of the study is that majority of male respondents prefer SST over physical banking; customers with higher income, higher education levels and those from metro and state capital are more comfortable with SST. ATM is highly preferred over mobile and internet banking in SST of banks.

4. ANALYSIS AND DISCUSSION

Table 1

Gender	Frequency	Percentage
Male	43	53.75
Female	37	46.25

Age	Frequency	Percentage
Below 25 years	11	13.75
25-35 years	20	25
36-45 years	26	32.5
46-55 years	16	20
Above 55 years	7	8.75
Occupation	Frequency	Percentage
Students	8	10
Employed	40	50
Business	18	22.5
Dependent	14	17.5

Source Primary Data

From Table 1 it is found that majority of respondents are male, majority belong to the age group of 36 to 45 years and majority are employed.

Table 2

Type of Bank	Frequency	Percentage
Public Sector Banks	45	56.25
Private Sector Banks	35	43.75
Most preferred Self-Service Banking Channels	Frequency	Percentage
ATM	33	41.25
Mobile/ Internet Banking	43	53.75
E-lounge	4	5
Frequency of using Self-Service Banking in a month	Frequency	Percentage
Daily	12	15
Few times a Weekly	32	40
Few times a Monthly	26	32.5
Rarely	10	12.5
Purpose of using Self-Service Banking	Frequency	Percentage
Withdrawal of Money	30	37.5
Deposit of Cash and Cheques	6	7.5
Bills and other payments	24	30
Transfer of Funds	20	25

Source: Primary Data

From Table 2 it is found that majority of respondents hold bank account in Public sector banks (45%). Majority of

respondents (53.75%) use Mobile/Internet channel of SSB followed by ATM facilities (41.25%). E-lounges are preferred the least among respondents (5%). Majority respondents (40%) use SSB few times a week, 32.5% use SSB few times a month, 12% use daily and 10% use SSB rarely in a month. Majority of respondents (30%) use SSB to withdraw money followed by 24% and 20% using SSB for payments and transfer of refund respectively and 6% to deposit cash/ cheques.

Table 3: Relationships between SSB dimensions and Relationship marketing outcomes

		Customer Satisfaction with SSB	Enhanced Customer Experience	Customer Retention	Customer Loyalty	Customer Satisfaction with Overall Bank Performance
Accessibility	Pearson's r	0.394	0.357	0.076	0.188	0.25
	df	78	78	78	78	78
	p-value	<.001	0.001	0.502	0.096	0.025
Security	Pearson's r	0.351	0.302	0.12	0.212	0.292
	df	78	78	78	78	78
	p-value	0.001	0.007	0.29	0.059	0.009
Reliability	Pearson's r	0.361	0.352	0.214	0.297	0.355
	df	78	78	78	78	78
	p-value	0.001	0.001	0.056	0.007	0.001
Competence	Pearson's r	0.437	0.404	0.135	0.27	0.411
	df	78	78	78	78	78
	p-value	<.001	<.001	0.233	0.015	<.001
Control	Pearson's r	0.422	0.439	0.203	0.227	0.255
	df	78	78	78	78	78
	p-value	<.001	<.001	0.071	0.043	0.022

Table 3 presents the correlation matrix of Pearson's (r) Correlation Analysis between Self-service banking dimensions and Relationship marketing outcomes. The data proves positive correlation between several dimensions (Accessibility, Security, Reliability, Competence, Control) and outcomes at 95% confidence levels. Accessibility has significant positive relationship with Customer Satisfaction in SSB ($r=.394$, $p<.001$), Customer Experience ($r=.357$, $p=.001$) and a moderate significance with Overall bank performance ($r=.250$, $p=.025$). There were no significant relationships with Customer retention ($r=.076$, $p=.502$) and customer loyalty ($r=.188$, $p=.096$). Security has significant positive relationship with Customer Satisfaction in SSB ($r=.351$, $p=.001$), Customer Experience ($r=.302$, $p=.007$) and Overall bank performance ($r=.292$, $p=.009$). Customer Loyalty ($r=.212$, $p=.059$) and Customer Retention ($r=.12$, $p=.29$) relationship with security were not significant. Reliability has significant positive relationship with Customer Satisfaction in SSB ($r=.36$, $p=.001$), Customer Experience ($r=.35$, $p=.001$) and Overall bank performance ($r=.35$, $p=.001$). Customer Loyalty ($r=.29$, $p=.007$) also has significant positive effect on reliability however customer retention ($r=.21$, $p=.056$) has marginal and not significant relationship. Competence has strong significant relationship with Customer Satisfaction in SSB ($r=.437$, $p<.001$), Customer Experience ($r=.404$, $p<.001$) and Overall bank performance ($r=.411$, $p<.001$). Customer loyalty ($r=.27$, $p=.015$) has significant relationship but retention ($r=.135$, $p=.233$) has no significant relationship with competence. Control has strong positive significant relationship with Customer Satisfaction in SSB ($r=.422$, $p<.001$), Customer Experience ($r=.439$, $p<.001$) and significant relationship with

customer loyalty ($r=.227$, $p=.043$) and Overall bank performance ($r=.255$, $p=.022$); similar to other dimensions customer retention ($r=.203$, $p=.071$) has no significant relationship with control.

5. FINDINGS

Majority of Bank customers prefer Mobile/Internet mode of Self-Service Banking. E-lounge is the least preferred mode of SSB among customers.

SSB is used few times a week by 40% of customers followed by 32.5% customers using SSB few times a month. 15% customers use on a daily basis and 12.5% use rarely.

Among 80 customers, 37.5% use SSB for withdrawal of money, 30% use SSB to transfer funds, 25% use for bills and other payments and 7.5% use to deposit cash and cheques.

All five dimensions of Self-Service banking (Accessibility, Security, Reliability, Competence and Control) are positively correlated with relationship marketing outcomes especially customer satisfaction with SSB, SSB also has significant correlation with customer experience and customer satisfaction with over all banking experience.

Accessibility, Security and Control have no significant relationship with Customer loyalty. Reliability and Competence have significant relationship with loyalty.

All SSB dimensions have no significant relationship with customer retention. Reliability has borderline insignificant relationship.

6. SUGGESTIONS

ATMs are the earliest form of SSB and are remain widely prevalent and used till date. The primary purpose of ATM is dispersal of cash from bank accounts. While there have been advancements of services such as deposit of money or cheques and even fund transfers, most ATM users only use it to withdraw cash. This maybe due to lack of upgradation in ATM centres and lack of digital confidence among typical ATM users. Banks can integrate basic e-lounge facilities in prime ATM locations to appeal ATM users and encourage them use other SSB functions and promote e-lounges. SSB should be integrated with user friendly interfaces and guidelines for ease of navigation by customers newly using the service. SSB has positively influenced customer experience and satisfaction. The key relationship marketing outcomes of retention and loyalty, especially retention, have weaker significance with the dimensions of SSB. Banks should focus on building personal relationships through the channels of SSB such as personalised greetings, proactive communication, timely reminders, digital engagement and integrated financial management. The lack of personal connections in self-service has to be overcome with technology, by effectively implementing data analytics and machine learning to connect and serve better with customers. The lack of retention and loyalty can also be attributed towards the homogeneous experience across all banks SSB services, encouraging switching behaviour. Innovation in SSB can boost customer engagement and retention also help in market positioning by providing competitive edge for banks.

7. CONCLUSION

SST has transformed financial markets, it has made banking and other financial services accessible to customers from anywhere and at any time by removing the barriers of confined working hours and offices. It increases customer convenience and boosts digital transactions. SSB and relationship marketing are mutually beneficial in modern banking. SSB provides additional customer touch points and increases customer engagement and its dimensions: accessibility, security, reliability, competence and control enhance customer experience, both of which are foundational for customer relationship. Relationship marketing strategies reinforce trust, commitment, bonding and other factors in SSB channels providing seamless experience across channels and enhance customer satisfaction. While SSB positively impacts customer satisfaction and customer experience, it is not sufficient to retain customers. Banks should develop strategies that effectively integrate relationship marketing principles in SST to effectively establish profitable long-term relationships in technology-driven environment.

REFERENCES

- [1] Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996), The Behavioral Consequences of Service Quality. *Journal of Marketing*, 60, 31-46.
- [2] Ugwuanyi Phd, Chidera & Uduji, Joseph & Oraedu, Chukwunonso. (2021), Customer experience with self-service technologies in the banking sector: evidence from Nigeria. *International Journal of Business and Systems Research*. 15. 10.1504/IJBSR.2021.10029513.
- [3] Chellapalli, T. (2023), Customer Experience of Banking Self-Service Technologies in India – An Empirical Study. *Academy of Marketing Studies Journal*, 27(3), 1-20.
- [4] Dr. Vaishali Lachhwani Assistant Professor, Pt. Harishankar (2023), Impact of Self-Service Technologies on Consumers *International Journal of Enhanced Research in Management & Computer Applications* ISSN: 2319-

7471, Vol. 12 Issue 1, January, 2023, Impact Factor: 7.751 Page 14.

- [5] Ragnvald, Sannes. (2001), Self-Service Banking: Value Creation Models and Information Exchange. Informing Science The International Journal of an Emerging Transdiscipline. 4. 10.28945/568.
 - [6] Dr. Khushboo Agnihotri & Dr Sachin Kumar Srivastava (2019), A Study on Consumer Acceptance of Self-Service Technologies in The Banking Sector, Impetus- Xavier's Interdisciplinary Research Journal, Volume VIII i August 2019.
 - [7] Djajanto, Ludfi & Nimran, Umar & Kumadji, Srikandi & Kertahadi, Kertahadi. (2014), The Effect of Self-Service Technology, Service Quality, and Relationship Marketing on Customer Satisfaction and Loyalty, IOSR Journal of Business and Management, 16.39-50. 10.9790/487X-16163950.
 - [8] Girsang, Runita & Sumiati, Sumiati & Djawahir, Achmad. (2021). The Influence of Self-Service Technology and Customer Relationship Marketing on Customer Loyalty Mediated by Customer Satisfaction, Jurnal Aplikasi Manajemen. 19. 217-228. 10.21776/ub.jam.2021.019.01.20.
 - [9] Pooja sharma1, Dr Sudipta Sen Gupta (2022), Customers Perception and Satisfaction Towards Technology Enabled Bank Services: An Empirical Study, Journal of Pharmaceutical Negative Results, 37-53.
 - [10] Ebuka, Ezenwafor & Okeke, Titus & Aghara, Vincent. (2020). SELF SERVICE TECHNOLOGY AND CUSTOMER LOYALTY IN THE BANKING INDUSTRY: A STUDY OF RETAIL BANK CUSTOMERS IN ANAMBRA. International Journal of Management and Economics. 2321-1784.
 - [11] Marfo, John & Owusu-Bio, Matilda & Asamoah, Pasty. (2022). The Effect of Self-Service Technologies on Customer Experiences in Banking: The Case of Ghana. International Journal of Online Marketing. 12. 1-18. 10.4018/IJOM.299404. .
-