

COST BENEFIT ANALYSIS ON MOBILE BANKING PRACTICES OF STATE BANK OF INDIA

¹B.Pramoda Holly Star, ²Dr. A.A. Ananth, ³Dr.A.Kotishwar

¹Research scholar, Annamalai University, Annamalai Nagar, Chidambaram, Tamilnadu.
pramoda.hollystar@gmail.com

²Professor, Department of Business Administration, Annamalai University, Annamalai Nagar
Chidambaram, Tamilnadu.

³Associate Professor, Department of Management Studies, CMR College of Engineering &
Management, Kandlakoya, Medchal, Hyderabad.

Abstract:

Technological changes have influenced entire financial sector worldwide and enabled banks to use new channels for rendering their services to the customers. Mobile Banking has become the most predominant practice of banks due to its increasing admiration, and India is no exception. This paper attempts to examine the “Cost Benefit Analysis of Mobile Banking Practices of State Bank of India”. The data of last 10 years i.e., from 2012 to 2022 has been taken for study. The variables Volume of Mobile Banking transactions, Cost per Transaction, Employee Cost, Printing & Stationary expenses and Rent expenses were used for study. The financial & statistical tools such as Trend Analysis and Least Squares Method were used for Analysis. The study resulted i that replacement of Traditional Banking practices with Mobile Banking has resulted an increase in overall banking transactions, reduction in Operational cost and increase in profits of banks.

Keywords: Banks, Mobile Banking, Traditional Banking, Cost, Benefits

1.Introduction

Technological changes have influenced entire financial sector worldwide and enabled banks to use new channels for rendering their services to the customers. Introduction of mobile banking has drawn a fruitful wedding between two unrelated areas i.e; Mobile and Bank. Mobile Banking has become the most predominant practice of banks due to its increasing admiration, and India is no exception.

Mobile banking has become the state of art of technology for various financial transactions in the bank by the customers. It is the most user friendly mode of operation which can be done through the app of the bank concerned.

It is a facility that enables customers to initiate and perform banking tasks on their smart phones. Customers can use mobile banking to view their account balance, make instant fund transfer and bills payment etc. It has creates a completely digitalized environment. It reduces paper work and waiting time in long queues. Mobile banking is very user-friendly and convenient to use.

Mobile Banking services were first initiated in the year 1999 by Industrial Credit and Investment Corporation of India (ICICI) Bank later followed by Housing Development Corporation of India (HDFC) and Industrial Development Bank of India IDBI [1].

State Bank of India(SBI) launched Mobile Banking in 2002 offering services like Balance Enquiry, Mini Statement, Funds Transfer, Bill Payments and others.

Multiple Mobile Banking apps developed by various banks and private websites are cost effective when compared to branch banking, which was 43 times more[2]

2. Theoretical Studies

M.S.Sahiya and T.Wadhe[3] in their study using Multiple Regression Analysis have examined that E-Banking has a beneficial impact on the profitability of both nationalized and traditional private banks. Asfour and Haddad[4] in their study observed that Mobile Banking has been opted as a way of reducing overhead costs of Jordan banks.. Ogotin and Fatoki[5] in their study concluded that there exists a strong positive relationship between various e-banking services and financial performance of commercial banks and further added that m-banking and financial performance are more strongly correlated. Sai Sudha and Venkata Durga Rao[6] in their study on five private sector banks using Time Series and Least Squared method on their digital transactions have found that mobile transactions and Real Time Gross Settlement(RTGS) have significantly influenced the index of banking technology but impacted negatively by Automated Teller Machine(ATM) and National Electronic Funds Transfer(NEFT) transactions

Objectives of the Study

1. To explore the trends in Mobile Banking Practices of State Bank of India
2. To Measure the impact of operational costs of Mobile Banking Practices and Traditional Banking operational cost on Operating Profit of State Bank of India.

4. Hypothesis of the Study

H0: There is no significant impact of Operational cost of Mobile Banking Practices on Financial Performance in relation with the Operational cost of Traditional Banking Practices.

H1: There is a significant impact of Operational cost of Mobile Banking Practices on Financial Performance in relation with the Operational cost of Traditional Banking Practices.

5. Sources of Data:

The data for the study is collected from secondary sources such as National Payments Corporation of India (NPCI), Banks website and related National and International Journals.

6. Research Methodology:

The study adopted an exploratory and quantitative research approach to examine the framed objectives. The main focus of the study was to investigate the financial benefits of Mobile Banking Practices in the context of State Bank of India. The quantitative research approach was employed to gather and analyze numerical data related to operational costs, financial performance, and transaction costs.

Mobile Banking is a funds transfer system where transactions will be done through the smart phone. Operating profit represents the profit earned by SBI from its operations in each year. The cost benefit ratio of Mobile Banking indicates the efficiency of Mobile Banking transactions in generating profit for SBI.

7. Tools of Analysis

The study adopted the descriptive and quantitative research approach for the examination of framed objectives. The study applied the following statistical tools.

- **Variables used for the Study**

Mobile Banking: Volume of transactions and Cost per Transaction

Traditional Banking: Employee cost, Printing & Stationery expenses & Rent and Lease expenses

- **Tools Used**
- Trend Analysis
- Ordinary Least Square Method

8. Results and Discussion

8.1.1 Trend line on Cost benefits of Mobile Banking

The tableno. 8.1.1 shows the year-wise data for Mobile Banking transactions, operating profit, and the cost benefit ratio for the State Bank of India (SBI) from 2010 to 2022.

8.1.1 Trend line on Cost benefits of Mobile Banking

Year	Volume of Mobile Banking Transactions of SBI	Operating Profit (in rs.)	Cost Benefits ratio
2010	625454.6	9,166.05	68.24
2011	125.1	8,264.52	0.02
2012	787992.3	31,573.54	24.96
2013	1052049	31,081.72	33.85
2014	265191.5	32109.00	8.26
2015	506119.3	38914.00	13.01
2016	904522.1	43,258.00	20.91
2017	1588056	50,847.90	31.23
2018	6601226	59,510.95	110.92
2019	28951394	55,436.03	522.25
2020	5.52E+08	68,132.61	8101.85
2021	6.41E+09	71,554.15	89582.50
2022	4.53E+08	75,292.37	6016.55

Source: NPCI and SBI

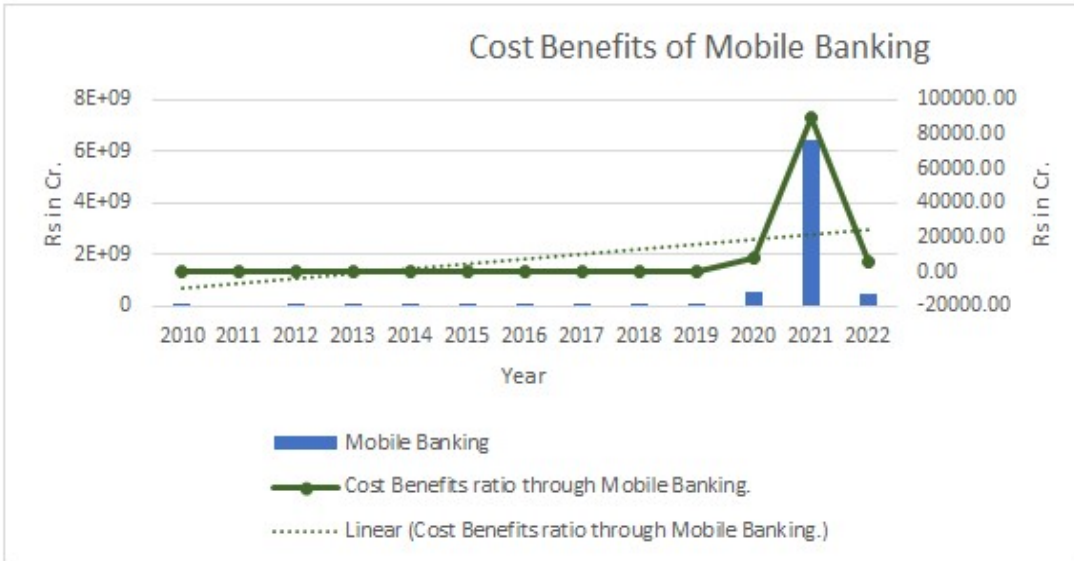


Figure No.8.1.1

The volume of mobile banking transactions has shown an increasing trend representing the growth in usage of green banking practices at SBI. Operating Profit is also representing an increasing trend but at a lower rate. Though the Cost Benefit Ratio has drastically fell down initially, from 2012 to 2019 the ratio increased substantially, reaching its peak in 2019. It then shows some fluctuations in the subsequent years. The fluctuations in the cost benefits ratio can be influenced by several factors. The decrease in the ratio from 2010 to 2011 suggests that the benefits derived from mobile Banking transactions per transaction were relatively lower compared to the costs incurred during that period. This could be due to factors such as lower transaction volumes, initial investments in mobile Banking infrastructure, and the need to establish a customer base. A higher ratio indicates better cost efficiency, while a lower ratio suggests lower cost effectiveness. However, the substantial increase in the cost benefits ratio from 2012 to 2019 indicates that the benefits per mobile Banking transaction increased significantly relative to the costs. This can be attributed to factors such as increased transaction volumes, economies of scale, improved operational efficiencies, and the growing acceptance and adoption of mobile Banking by customers.

OBJECTIVE – II

8.1.2 Impact of Mobile Banking coston the Operating Profit of SBI

Dependent Variable: OPPROFIT_				
Method: Least Squares				
Sample: 2010 2022				
Included observations: 13				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	41127.73	599.8962	6.855808	0.0000

MOBILE	0.249306	3.352306	3.619192	0.0337
R-squared	0.692470	Mean dependent var		44241.60
Adjusted R-squared	0.619058	S.D. dependent var		21828.64
S.E. of regression	20488.04	Akaike info criterion		22.83371
Sum squared resid	4.62E+09	Schwarz criterion		22.92062
Log likelihood	-146.4191	Hannan-Quinn criter.		22.81584
F-statistic	2.621783	Durbin-Watson stat		0.642347
Prob(F-statistic)	0.133695			

Source: NPCI and SBI

The table (8.1.2) shows the Impact of Mobile Banking Cost on the Operating Profit of SBI. The ordinary least square method result indicated that the P value observed to be significant ($0.0337 < 0.05$). The coefficient value of Mobile Banking expenditure (0.249306) having the positive Impact on the growth of Operating Profit, which states that one unit rise of cost incurred of Mobile increases the 0.108463 units rise in operating profitability. The adjusted R square value observed to be strong (i.e., $0.619058 > 0.6$), which indicates that model found to be strong. Hence, the study rejects the H_0 and accepts the H_1 , which reveals that significant cost benefit has been observed with the expenditure incurred on the Mobile pushing the operating profitability at higher side. Therefore, increase of Mobile expenditure of the bank fuels the financial performance of the bank.

8.1.3. Impact of Employee Cost on Operating Profit of SBI

Dependent Variable: OPPROFIT_				
Method: Least Squares				
Sample: 2010 2022				
Included observations: 13				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	53137.55	5417.685	9.808165	0.0000
EMP_COST	-12.238668	0.076515	-3.119249	0.0098
R-squared	0.469361	Mean dependent var		44241.60
Adjusted R-squared	0.421121	S.D. dependent var		21828.64
S.E. of regression	16608.13	Akaike info criterion		22.41381
Sum squared resid	3.03E+09	Schwarz criterion		22.50073
Log likelihood	-143.6898	Hannan-Quinn criter.		22.39595

F-statistic	9.729714	Durbin-Watson stat	0.274008
Prob(F-statistic)	0.009763		

Source: NPCI and SBI

The table (8.1.3.) Indicates the impact of Employee Cost of SBI on the financial Performance i.e., Operating Profit. The study indicated the result of Ordinary least square method and the P value observed to be significant i.e., $0.0098 < 0.05$. The coefficient value (-12.238668) indicated that Operational cost i.e., Employee Cost having negative effect on the growth of Operating profit of the bank. It states that one unit rise of Employee Cost of the bank pulling the operating profit by -12.238668 units. The adjusted R square ($0.421121 > 0.3$) observed to be moderately fit, which indicated the strength of the model found to be moderate. Hence, the study rejects the H_0 and accepts the H_1 . Therefore, Operational cost variable – Employee Cost influenced the financial performance of the bank negatively. Increase in the operational expenses through the traditional Banking practice i.e., Employee Cost influence having the adverse effect on the operating profit.

8.1.4 Impact of Printing & Stationary on the Operating Profit of SBI

8.1.4. Impact of Printing & Stationary on the Operating Profit

Dependent Variable: OPPROFIT_				
Method: Least Squares				
Sample: 2010 2022				
Included observations: 13				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	110108.2	5319.913	20.69737	0.0000
PRNT_STNRY_EXP	-6.37724	2.035787	-12.95678	0.0000
R-squared	0.938506	Mean dependent var		44241.60
Adjusted R-squared	0.932915	S.D. dependent var		21828.64
S.E. of regression	5653.777	Akaike info criterion		20.25867
Sum squared resid	3.52E+08	Schwarz criterion		20.34559
Log likelihood	-129.6814	Hannan-Quinn criter.		20.24081
F-statistic	167.8782	Durbin-Watson stat		2.040004
Prob(F-statistic)	0.000000			

Source: NPCI and SBI

The table (8.1.4.) shows the impact of Banking Operational cost (Printing & Stationary) on the financial Performance i.e., Operating Profit. The study indicated the result of Ordinary least

square method and the P value observed to be significant i.e., $0.0000 < 0.05$. The coefficient value (-6.37724) indicated that Operational cost i.e., Printing & Stationary having negative effect on the growth of Operating profit of the bank. It states that one unit rise of Printing & Stationary expenses of the bank pulling the operating profit by -6.37724 units. The adjusted R square ($0.932915 > 0.6$) observed to be strongly fit, which indicated the strength of the model. Hence, the study rejects the H_0 and accepts the H_1 . Therefore, Operational cost variable influenced the financial performance of the bank negatively. Increase in the operational expenses through the traditional Banking practice i.e., Printing & Stationary influence having the adverse effect on the operating profit.

8.1.5. Rentals & Lease Expenses (Operational Cost) Impact on Operating Profit of SBI
8.1.5. Impact of Rentals on the Operating Profit

Dependent Variable: OPPROFIT_				
Method: Least Squares				
Sample: 2010 –2022				
Included observations: 13				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	80037.61	3436.181	23.29260	0.0000
RLEXP_	-1.996385	0.166880	11.96303	0.0000
R-squared	0.928624	Mean dependent var		44241.60
Adjusted R-squared	0.922136	S.D. dependent var		21828.64
S.E. of regression	6091.107	Akaike info criterion		20.40769
Sum squared resid	4.08E+08	Schwarz criterion		20.49460
Log likelihood	130.6500	Hannan-Quinn criter.		20.38982
F-statistic	143.1141	Durbin-Watson stat		1.432637
Prob(F-statistic)	0.000000			

Source: NPCI and SBI

The table (8.1.5.) depicts the impact of Banking Operational cost on the financial Performance i.e., Operating Profit. The study indicates the result of Ordinary least square method and the P value observed to be significant i.e., $0.0000 < 0.05$. The coefficient value (-1.996385) indicates that Operational cost i.e., rentals having negative effect on the growth of Operating profit of the bank. It states that one unit rise of rentals expenses of the bank pulling the operating profit by -1.9963 units downwards. The adjusted R square ($0.932915 > 0.6$) observed to be strongly fit, which indicated the strength of the model. Hence, the study rejects the H_0 and accepts the H_1 . Therefore, Operational cost variable (Rentals expenses) influenced the financial performance of the bank negatively. Increase in the operational expenses through the traditional Banking practice i.e., Rentals influence having the adverse effect on the operating profit.

Findings

1. The Cost-Benefit ratio of Mobile Banking has fluctuated significantly throughout the years. Beginning at 68.24 in 2010, it fell to its lowest point of 0.02 in 2011 before rising steadily. By 2021, the Cost-Benefit ratio had reached an impressive 89,582.50. This indicates the effectiveness and cost-effectiveness of Mobile Banking, indicating that revenue or benefits generated through Mobile transactions have increased after the pandemic effect, resulting in a significant increase in the banks' profitability through Mobile Banking.
2. It observed that the use of Mobile Banking has a higher positive impact (weight of 0.449306) on the financial performance of State Bank of India (SBI). This indicates that the adoption of Green Banking practices, particularly Mobile Banking, has a positive influence on SBI's financial performance.
3. It reported that operating expenses related to Employee Cost (weight of -12.238668), printing and stationary (weight of -6.37724), and rental expenses (weight of -1.996385) have a negative impact on the financial performance of State Bank of India (SBI) in the context of Traditional Banking practices. This indicates that higher expenses in Employee Cost, Printing and Stationary, and Rentals adversely affect adversely on SBI's financial performance.
4. It observed that SBI's Traditional Banking practices, as represented by these operating expenses, are likely leading to increased costs or inefficiencies that are negatively impacting the financial performance. This states that reducing or optimizing these Traditional Banking practices could result in improved financial outcomes for SBI.

Suggestions

1. The fluctuating yet impressive Cost-Benefit ratio of Mobile Banking indicates its effectiveness and cost-effectiveness. Banks should focus on further enhancing their Mobile Banking services, investing in user-friendly interfaces, robust security measures, and innovative features to maximize the benefits derived from Mobile transactions and provide a seamless Banking experience for customers.
2. The negative impact of employee costs, printing and stationary expenses, and rental expenses on SBI's financial performance highlights the need for cost optimization measures. SBI should evaluate these areas to identify opportunities for reducing costs, improving efficiency, and streamlining operations. This can involve exploring automation solutions, renegotiating rental agreements, and implementing sustainable practices within the organization to reduce unnecessary expenses.

References

1. Dr. Parul Deshwa, "A Study of Mobile Banking in India", *International Journal of Advanced Research in IT and Engineering*, Vol. 4, No. 12, December 2015 ISSN: 2278-6244, Impact Factor: 5.418

2. *Dr. Varsha Agarwal, Shresth Poddar, Sahil J Karnavat, "A Study on Growth of Mobile Banking in India during COVID 19", Palarch's Journal of Archaeology of Egypt/Egyptology, 17(6), 2020, 9461 – 9485.*
3. *Saluja, M.S. Wadhe T (2015), "Impact of E-Banking on Profitability of Commercial Banks in India", International Journal in Management and Social Science, 3(2) , 478-483.*
4. *Asfour, H.K and Haddad, S.I (2014). "The Impact of Mobile Banking on Enhancing Customers E-Satisfaction: An Empirical Study on Commercial Banks in Jordan", International Business Research: 7(10). PP 145-169.*
5. *Ogtin M and Fatoki.O, "Effect of E-Banking on Financial Performance of Listed Commercial Banks in Kenya", Global Scientific Journals, 2019, 7(9), 2320-9186.*
6. *J Sai Sudha and P Venkata Durga Rao, "Technology Impact on Banking Sector Performance with Reference to Select Private Sector Banks", International Journal of Recent Technology and Engineering", Volume-8, Issue-6, ISSN:2277-3878 (online) March 2020.*