IMPACT OF TECHNOLOGY ON PROFITABILITY OF LARGE INDIAN BANKS

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Abstract:

Technology is changing the way people do banking. New channels of customer engagement and delivery of banking services are being added as the technology evolves. Indian banks have embraced technology to enhance the reach among the customers, reduce operational cost and find innovative ways of providing banking services. The study explores the impact of technology on profitability of large private and private sector banks in India. HDFC, ICICI, SBI and PNB were selected to evaluate the impact of technology on profitability. The data of fourteen years from 2004 to 2017 was used for the study. Data was analyzed using paired t test. It was found that return on assets have improved over the time period. Private bank had shown higher return on assets as compared to public sector banks. Only SBI had shown a significant improvement in return on equity. HDFC bank had highest return on assets and return on equity.

Keywords: Profitability, Technology, Private Banks, Public Sector Banks, ROA, ROE

Introduction

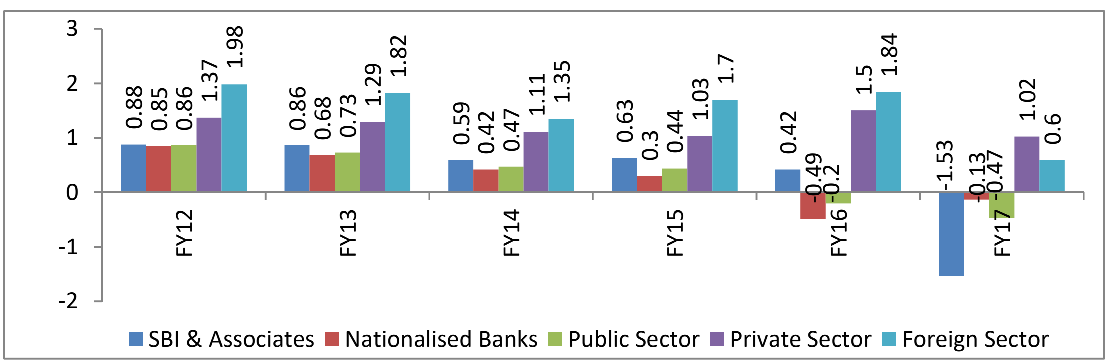
Use of artificial intelligence and robotics is catching up with Indian banks. HDFC Bank has launched Intelligent Robotic Assistant (IRA) a humanoid in branch. Chatbot messenger service is also gaining popularity. HDFC Bank has launched OnChat and SBI has launched SBI Intelligent Assistant (SIA) chatbot service. Chatbot offers conversational banking with the use of artificial intelligence to answer queries of customers. OnChat has witnessed 160% growth month on month from December 2016 to September 2017(Sridhar, 2017).

Mobile banking has provided alternative delivery mechanism for banks. Customers have accepted mobile banking as a fast and convenient way of banking. In terms of adoption of mobile banking, India ranks forth across the world. The average volume of mobile wallet transactions had grown from US $ 1 billion in 205 to US $ 9 billion in April 2017. Rising rural teledensity from 0.4 million units in 2007 to 56.35 million units in 2017 provides opportunity to expand mobile banking services in rural India (ibef, 2017). Launch of Unified Payment Interface (UPI), Bharat Interface for

Money (BHIM) has supported the digital payments growth. The average daily transactions on UPI/BHIM have grown from Rs. 0.1 lakh to Rs. 23.36 lakh. The average daily transactions on Aadhar Enabled Payment System has grown from Rs. 12.06 lakh to Rs. 29.08 in October 2017, on Immediate Payment Service has increased from Rs. 8.96 lakh to Rs. 32.42 lakh in October 2017, on Mobile Wallet has increased from Rs. 46.03 lakh to Rs. 72.72 lakh in October 2017. The number of point of sale (POS) machines has increased from 15 lakh in October 2016 to 29 lakh in August 2017. Total digital transactions have increased from Rs. 607 crore in 2015-16 to Rs 1800 crore in 2017-18 (Deshpande, 2017).

Technology has not shown positive impact on profitability in terms on returns on assets (ROA) in recent times. The return on assets for public sector banks for FY16 and FY 17 had been negative. SBI & Associates had shown a return on assets of -1.53% for FY 17. Nationalized banks had shown a return on assets of -0.13%. Public sector banks had a return on assets of -0.47%. Though the return on assets was positive for private and foreign banks but it had shown a declining trend. In Fy17 the return on assets for private sector banks was 1.02% and for foreign banks the return on assets for FY17 was 0.6% (ibef, 2017).

Figure 1: Return on Assets for Indian Banks from FY2012 to FY 2017 (%)



Source: India Brand Equity Foundation, Ministry of Commerce & Industry, Government of India, 2017

The return on assets from FY 2012 to FY 2017 has not been encouraging, despite the gradual rise in adoption of technology in Indian banking. It raises doubts on the significance and highlights the limitations of technology in profitability, productivity and efficiency of bank in India.

Objective

Evaluate the impact of technology on profitability of Public and Private Banks in India.

Literature Review

Ram Mohan (2002) examined the performance of banks in India. The study covered time period from 1996-97 to 1999-2000. It was found that public sector banks have improved profitability as compared to private sector and foreign banks. Public sector banks have slowed down in terms of attracting deposits and adoption of technology. Public sector banks have also shown poor performance comparatively in terms of improving employment practices and staffing. The human resource issues will have a negative impact on the profitability of public sector banks in long term.

Arora and Kaur (2006) examined the financial performance of nationalized banks, private sector banks, state bank group and foreign banks after the reforms. It was found that non-performing assets had an adverse impact on the financial performance of public sector banks. It was recommended that public sector banks should enhance the training of the employee, reduce non-performing assets to improve financial performance.

Anjum (2007) investigated productivity in the Indian public sector banks. The study found that the increase or decrease in number of branches or number of employee had no significant impact on productivity. It was found that productivity depends on volume of business and proper utilization of resources. It was suggested that banks should use merger along with training of employee to improve profitability.

Uppal (2010) assessed productivity and profitability of Indian banks in pre and post e-banking period. It was found that new generation private sector banks and foreign banks have a dominant position as compared to public sector banks. Public sector banks are facing tough competition from fully IT oriented banks. It was stressed that banks should concentrate on human resource management; enhance the skills of staff, use customer centric approach and explore mergers and acquisition.

Kumar and Gulati (2010) analyzed performance of banks after reforms. It was argued that due to technology adoption and competition the efficiency of banks have improved. It was argued that to leverage technology, banks should focus on competition and market oriented strategies.

Sharma and Prasad (2014) analyzed the development and challenges of Indian banking after liberalization. It was found that new opportunities have emerged due to liberalization in banking sector, at the same time many challenges have emerged for the banks. It was recommended that banks should increase the coverage to services masses and reduce cost and expand globally.

Narwal and Pathneja (2015) evaluated profitability and productivity of Indian Banks. Data from 2010 to 2014 was considered for the study. The time period was divided into two segments; 2005 to 2009 and 2010 to 2014. It was concluded that public sector banks lags behind private sector banks in productivity. There was no significant difference between profitability of two groups of banks.

Aggarwal (2016) examined banking sector. It was argued that retail banking is more versatile and demanding for the Indian banking. It was recommended that operational cost should be reduced without compromising the level of technology.

Chai, Tan and Goh (2016) assessed impact of technology on performance of banks. It was found that employee commitment has a significant association with performance of a bank. Committed employees with high level of motivation enhance productivity and performance of bank.

Maken and Shekhar (2017) analyzed the performance of private and private sector bank. Performance of PNB and HDFC was considered for the study. Time period of study was from 2012 to 2016. It was concluded that HDFC had performed better as compared to PNB. The total income of HDFC had increased by 118.18% as compared to 33.65% of PNB. Total investments of HDFC have grown at a rate of 93.42% as compared to 28.72%.It was concluded that public sector banks are lagging behind technology, as compared to private sector banks.

Research Methodology

A descriptive research approach was used for the study. Secondary data was collected from annual reports of banks. The banks selected for the study were HDFC bank, ICICI bank, State Bank of India (SBI), Punjab National Bank (PNB). The secondary data was collected for a period of fourteen years 2004 to 2017. Paired t test was applied by dividing the time period into 2004 to 2010 and seven years post 2010. The data was analyzed through SPSS version 21. The variables used for assessing profitability were return on assets and return on equity. The comparison between private and public banks profitability change due to technology was done using paired t test.

Findings:

Table 1: Paired T Test for Return on Assets (%)

	Mean Upto 2010 (%)	SD	Mean After 2010 (%)	SD	t value	Sig.
ICICI Bank	1.20	0.22	1.55	0.17	2.86	0.029
HDFC Bank	1.39	0.15	1.86	0.09	5.803	0.001
SBI	0.94	0.20	0.68	0.07	-3.118	0.021
PNB	1.19	0.67	0.61	0.16	-1.892	0.107

Source: Researcher Calculation (Secondary data from annual reports of banks)

The return on assets had shown a significant change in the period after 2010 for ICICI, HDFC and SBI (P value <0.05). The return on assets had increased from 1.20% to 1.55% in case of ICICI bank. HDFC bank had registered improvement of return on assets from 1.39% to 1.86%. SBI had shown a decrease in return on assets from 0.94% in period upto 2010 to 0.68% in the period after 2010. Technology had shown different impacts on different banks with regard to return on assets.

Table 2: Paired T Test for Return on Equity (%)

	Mean Upto 2010 (%)	SD	Mean After 2010 (%)	SD	t value	Sig
ICICI Bank	12.59	1.78	11.90	3.93	-0.441	0.674
HDFC Bank	18.06	1.58	18.89	1.89	0.798	0.455
SBI	16.13	3.23	11.40	1.85	-4.623	0.004
PNB	18.09	11.10	9.42	4.41	-1.53	0.177

Source: Researcher Calculation (Secondary data from annual reports of banks)

It was found that return on equity had no significant change in the period upto 2010 and period after 2010, as all P values were more than 0.05 for ICICI bank, HDFC Bank and PNB. SBI had shown a significant change (P<0.05) in return on equity (ROE). ICICI bank had mean return on equity of 12.59% in the period upto 2010 and return on equity had declined to 11.90% in the period after 2010. HDFC bank had shown a marginal increase in return on equity from 18.06% to 18.89%. SBI had shown a significant decline in return on equity from 16.13% to 11.40%. The decline was significant as the P value (0.004) was less than 0.05. PNB has shown a decline of return on equity from 18.09% to 9.42%.

Conclusion:

Return on assets has improved significantly for all three banks except PNB. Return on assets was more in case of private sector banks. HDFC Bank had the highest return on assets of 1.86%. Only SBI had shown a significant improvement in return on equity. Highest ROE was obtained by HDFC Bank at 18.89%. It is concluded that technology can not be a substitute for good management. HDFC bank has consistently been awarded for good management and leadership. It is the bank with best performance in terms of profitability. Banks should focus on attracting talent and retaining, empowering talent for improving profitability of the bank. Banks focusing on both good leadership and latest technology will sustain the profitability, business growth and become leaders in the banking sector.

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