ABSTRACT OF THE THESIS

on
Impact of banking delivery channels on profitability and customer services of banks: A comparative study of selective banks in Pune city

Introduction and Rationale of the study
The economic liberalization in the early 1990’s ushered in the era of privatization wherein many new private banks referred to as “new generation tech-savy banks” were launched. A few foreign banks commenced their operations in India as well. All these banks were swift to leverage new technology, were competitive in wooing customers and winning them over by providing professional services. This helped to infuse a sense of urgency in Public sector banks and old private banks to change their ways, which in turn completely revitalized banking operations in India.

The Reserve bank of India played its important part in the transformation of banks by issuing regulations and recommendations on banking mechanizations and computerization. Establishment of inter-connectivity across bank branches, introduction of MICR based cheque clearing, modernization of payment services and settlements through ECS, RTGS, NEFT were all important landmarks in the banking technology revolution. Emergence of new products and services of IT such as data warehousing, business intelligence, and customer relationship management aided banks to innovate new products and services in financial sector with in-built risk analysis capabilities. Provisions of multi-channel capabilities enabled IT such as core banking, internet banking, telephone banking, ATMs network, mobile banking, e-commerce etc. made financial sector more competitive.

Costs of transactions reduced, positioning themselves in market for new and small sized institutions became feasible. Security and safety started receiving due recognition from both vendors of IT on one hand and banks on the other addressing concerns of end-users. Thus, the banking industry underwent transformation due to adoption of new technology, which has not remained an option but a matter of survival. Indian banking (comprising nationalized,
private and co-operative banks) also experienced transformation but the rate of adoption of new technologies varied greatly owing to number of reasons. New private sector banks did excellently while co-operative banks remained laggards. This is one side of the coin of Indian banking transition, while the other side is customer’s requirement which infact transformed the banking business scenario from market-driven entity to a customer driven one. Educated upper-class enjoying a higher standard of living, with increased earning power and disposable savings, neo-upper middle class, and young technology-savvy generation with higher income profile further drove demand for outstanding customer service. Bank customers required “good customer service” to include such features like no long waits in lines, a friendly attitude of bank employees, quick services, fast attention to customers, new suggestion from the bank to serve customers to name a few. Besides efficient and satisfactory services to customers, increased competition, product standardization, pressure to cut costs and avoid hi-tech fraud are the common agendas for the successful management of banks. At a given scenario, banking services offered through new delivery channels by various banks depends on number of factors. Customer base and their needs, cost effectiveness, efficiency with accuracy, additional cost and returns, security, need for transformation in global demands, etc. are few factors to list. While on the other hand from customer’s point of view, factors like need for such services, convenience, savings in time, money and energy, customer-friendly utilities, education, income level, etc. determines their performance for a specific bank as well as such services.

**Objectives of the Study**

1. to examine and document the present status and prospects of services offered through delivery channels by sample banks,
2. to analyse the customers behaviour based on their needs and socio-economic-educational parameters towards services offered through delivery channels,
3. to evaluate impact of such services on customers from efficiency, accuracy, cost effectiveness, user friendly nature point of view, and on profitability of Banks.

4. to analyse the factors responsible for success/failure across selected banks in the implementation of services through delivery channels.

**Hypotheses of the study**

1. Banks prefer to offer services through different delivery channels over traditional methods in order to cope up with the pace of modernization.

2. Customers with better socio-economic and educational backgrounds prefer to utilize services offered by Banks through different delivery channels.

3. The services offered through new delivery channels are helpful in achieving accuracy, and saving in money, time, and efforts.

**Methodology**

**Study area**: Pune is socio-economically and industrially well developed city and it is one of the most progressive cities not only in Maharashtra but also in India. Pune has all types of banks operating viz. PSU, Old and New Private Sector Banks, Co-operative Banks. For the purpose of this study, Pune city covers PMC and PCMC areas has been considered.

**Sample selection criteria for selection of sample banks**

The banking landscape consists of three sectors viz. Public Sector, Private Sector and Co-operative Sector. To make the sample representative, all three sectors were chosen by selecting one bank from each sector. There were 28 public Sector banks (PSBs), 8 New Private Sector Banks (NPBs), 1770 Urban Co-operative Banks (UCBs) as on March 2008 in India. All NPB corporate offices and majority PSBs corporate offices were outside Pune city. So, banks with branches operating in Pune city and having implemented electronic delivery channels were chosen as sample banks for the purpose of this research study. Willingness of bank managements to permit this study & share data where ever possible was another factor in the choice of sample banks. Bank of Baroda (BoB), a PSB, Axis Bank (Axis), a
NPB and Thane Janata Sahakari Bank Ltd., Thane (TJSB), a UCB were the only three banks to accord permission for this study in response to a request letter sent to all PSBs and NPBs and selected UCBs based on their level of technology adoption. Hence, convenience sampling was used to select one sample bank from each sector. For the present study, Foreign banks have not been considered as they are not mass bankers like the other banks and have their presence in metros and semi-metros only.

Sample selection criteria for sample bank branches

Axis Bank allotted Bund Garden Branch, bank of Baroda allotted Baner Road, Kothrud & SB Road Branch and Thane Janata Sahakari bank Ltd. allotted Deccan, Chinchwad, Dehu Road Branch for data collection.

Sample selection criteria for customer and staff samples

Sample size of 225 customers per bank and 30 staff per bank is in conformity with Roscoe’s (1975) rule of thumb, and sample size between 30 and 500 being sufficient for the purpose of a sample as confirmed by Moya (2010). Further, Sample size in conformity with Sekaran (1975) that sample sizes larger than 30 and less than 500 are appropriate for most research. Thus, the research takes customer views / perceptions of 675 customers uniformly divided between three sample banks and 90 staff views / perceptions uniformly divided between three sample banks were obtained. The final sample size was 675 customers + 90 staff = 765. Customers were selected on simple random basis. Staff from branches having implemented delivery channels were selected purposively.

Research Instrument

Questionnaires were prepared based on detailed review of literature and finalised in consultation with research guide. Two separate questionnaires were prepared to collect the information from customers and staff. Period of data collection stretched between Feb 2010 to July 2011. Pilot testing of sample of 100 responses were obtained, coded, and analyzed. Opinions and suggestions were taken from experts in banking, bank managers of sample banks and colleagues to finalise questionnaire.
**Sources of Data:** This research study is based on primary as well as secondary data.

**Primary Data:** Customer data was collected in questionnaires having three parts to collect personal information, opinion and attitude questions which contained open and closed questions and rating question, suggestions/views/opinions as an open ended question. Staff data was collected in questionnaires having three parts to collect personal information, opinion and attitude questions which contained open and multiple choice questions, suggestions/views/opinions as an open ended question. Data was collected from staff by conducting interviews in the branches. Customer data was collected in questionnaires filled up at ATM centers & branches allotted by sample banks.

**Secondary Data:** Secondary data are sourced from comprehensive study of books, Ph.D thesis, magazines, journals, newspapers, periodicals, articles in libraries of reputed institutions such as Jayakar Library, VAMNICOM, ICM Pune, CAB, NIBM. Internet has been an important source of secondary data. Profitability ratios are extracted from Annual Reports of banks and other relevant documents as well as from the internet. Some ratios were also calculated. Reports and publications, press notes were collected from web site of the RBI, NPCI, National Federation of Urban Banks, IBA etc. The Report on Trend Progress of Banking in India brought out by the RBI, Report on customer services, Report on Internet banking published by the RBI were also referred to.

**Time period of the study:** 2006-07 to 2010-11

**Data processing, analysis & statistical tools used**

Data was classified and tabulated using MS-Excel in light of the laid objectives. Financial data was analysed using various statistical tools like Profitability ratios, Efficiency ratios and Growth rates. Data has been depicted through different graphs. Other statistical tools used for data analysis : Cross-tabulation, Simple frequency, Percentage, Correlation, Chi-
square test, Weighted Average Score, Garrette’s ranking technique, profitability ratios.

Limitations of the study:
1. Customer services refer to retail customer services only.
2. Banking delivery channels cover electronic channels such as ATM, Mobile banking and Internet Banking.
3. Mobile banking does not cover Mobile-Internet Banking.
4. Only quantitative aspects of profitability have been considered.
5. Despite best efforts the researcher could not collect data pertaining to cost aspects of delivery channels and number of transactions in the study period for sample banks.
6. It is assumed that respondents are true and honest in expressing their views and have filled the questionnaire honestly and without any bias.

Important Observations / Findings and Recommendations

General observations
1. Sample banks were in a position to implement delivery channels swiftly on adopting Core Banking System.
2. Axis started implementation of ATMs in 2000. As on 31-3-2011, Axis had implemented 6290 ATMs, BoB 1561 and TJSB 58. Thus, Axis customers got maximum benefit of using own bank ATMs as many times as required without payment of charges.
3. Axis and BoB have a pan India and overseas presence with 1,390 and 3,148 branches respectively as on 31-3-2011. Customers of Axis & BoB could access banking services from many more branches across a very large geographical area as compared to TJSB whose operations were limited to a few states in India.

Field Study Observations on Customer Perceptions
1. Description of the sample selected: 21 (3.1 percent) respondents did not use delivery channels, 9 (1.3 percent) used credit cards, 5 (0.74 percent) used telebanking and 4 (0.59 percent) used Cheque Deposit Machines. Since this sample size of 39 respondents constituting 5.73 percent of the
total sample size of 675 respondents was too small, these respondents were filtered out leaving 636 samples for analysis.

197 (31 percent) respondents belonged to Axis, 220 (34.6 percent) belonged to BoB and 219 (34.4 percent) belonged to TJSB. The total number of respondents was 636.

2. 620 (97.4 percent) respondents were ATM users, 376 (59.1 percent) were internet banking users and 415 (65.2 percent) were mobile banking users. Thus, ATM was the most popular delivery channel followed by mobile banking and internet banking.

3. Customer Profile

47.3 percent respondents using delivery channels fell in the age group of 30-50 years only 21.7 percent female respondents used delivery channels. 47.2 percent customers using delivery channels were graduates, 77.5 percent respondents belonging to open category used delivery channels, 53.3 percent customers who are employed (service) used delivery channels, 38.8 percent customers was the largest group using delivery channels from below Rs. 2 lacs p.a. income category.

4. 18.1 percent respondents did not prefer to use delivery channels while majority of 81.09 percent respondents preferred to use delivery channels.

5. The study reveals the following factors that influence customers to use delivery channels. Respondents ranked “saves time, money and effort” at first position followed by “accuracy in transaction at second position”. However, while ranking the factors “easy to operate” and “trust-safety-security” was ranked at fifth and sixth rank, both being ranks at the lower end.

6. The study shows that 54.5 percent respondents preferred to use ATM while 32 percent respondents preferred to use teller. About 11 percent respondents preferred to use both ATM and teller, which ever was convenient.
7. The research study reveals that 45.9 percent respondents prefer to use on-site and off-site ATM based on their convenience. 33 percent respondents use off-site ATMs and 18.5 percent respondents use on-site ATMs.

8. The study found that 43.3 percent respondents saved up to 30 minutes in terms of time, 34.1 percent respondents saved between Rs. 30-50 and 48.7 percent respondents saved less than 1 km in terms of distance (efforts).

9. From the study it is observed that 88.43 percent respondents saved time, money and efforts by using mobile banking, while 10.10 percent respondents were unable to say whether saved time, money and efforts by using mobile banking. 1.40 percent respondents did not save time, money and efforts using mobile banking.

10. 92.80 percent respondents using internet banking saved time, money and efforts by using internet banking, 6.10 percent respondents were unable to say whether there was any saving in time money and efforts by using internet banking. 1.06 percent respondents did not save time, money and efforts using internet banking.

11. Based on the rankings given by respondents their preference for ATM facilities were in the following order: Cash withdrawal, balance check / mini statement, mobile recharge, utility bill payment, transfer of funds, booking tickets, cheque book/DD request.

12. Respondents were asked to rank the problems faced by them while using ATMs. The ranking of problems was in the following order: non-operational ATM, inadequate ATMs, machine out of cash, no security guard at ATM center, network failure, low cash withdrawal limit, no power back up.

13. Based on the ranking given by respondents to mobile banking facilities used, their preference were in order of balance enquiry / Mini Statement, alerts on account, mobile recharge, utility bill payment, transfer of funds, access to loan accounts, cheque book / DD request.
14. Respondents ranked problems faced by them while using mobile banking which was in the order security concerns, low awareness, poor telecom quality, problem in handling mobile, concern about lost or stolen mobile handset.

15. The highest number of respondents 31.8 percent faced problem as they received SMS at odd hours. 24.5 percent respondents felt that less number of facilities were offered through mobile banking. 23.8 percent respondents felt insecurity when mobile phone itself was lost / misplaced or went into wrong hands of unknown persons. 22.1 percent respondents complained that incomplete SMSs were received. 10.8 percent users felt they had no knowledge of how to handle matter when something went wrong during a transaction. 7.04 percent respondents felt that they were unable to access older data.

16. The study revealed the preference of respondents for internet banking in the following order : balance check, account statement, funds transfer, utility bill payment, booking e-ticket, DD/cheque book order.

17. The respondents ranked the problems in the order : lacks trust, unawareness of internet banking, resistance to change, expensive, problem in access to internet, less user friendly.

18. Respondents also reported other problems faced by them with respect to internet banking such as problem in remembering passwords, lack of education and awareness of internet banking, limited facilities/services offered through internet banking.

19. 52.6 percent respondents rated ATM services excellent, while 27 percent respondents rated internet banking satisfactory. 27.8 percent respondents rated mobile banking respondents 27.8 good.

Field Study Observations on Staff Perceptions

1. 78.8 percent staff felt that delivery channels had decreased their workload. 16.6 percent felt that there was no effect on their workload and 4.4 percent felt that the workload had increased.
2. Staff perceptions of delivery channels were in the order: improves staff operational efficiency, increased accuracy, quick service, user friendly service, reduce long Q’s in front of counters, reduces cost per transaction and increases profitability of bank.

3. 47.7 percent staff finds difficulty in guiding, convincing and encouraging respondents to use delivery channels due to lack of proper training & knowledge.

4. 28.8 percent fear of data loss and fraud.

5. Incase of BoB & TJSB number of facilities offered through delivery channels need to be enhanced so that true benefits of delivery channels will accrue to customers and bank.

6. 18.8 percent felt that they lacked expertise in handling delivery channels

7. 5.5 percent in case of TJSB, the staff faced a problem with respect to size of currency chest which did not match cash dispensing requirement and needed replenishment frequently.

Field Study Observations on profitability

Basis for selecting profitability ratios: Report on Trends and Progress of banking in India 2012-13 published by the RBI has devoted an entire section to analysis of profitability which forms the basis for selection of ratios for evaluation of profitability of sample banks. To analyse the profitability of Commercial banks the cost to income ratio, Net Interest Margin ratio and Return on Assets ratio are considered. To analyse profitability of Urban Co-operative banks Net Interest margin ratio, Return of Assets ratio and Return on Equity ratio are considered.

Technology and delivery channels impact non-interest income and Interest income. Hence, Non-interest income to Average Working Fund AWF ratio & Interest Income to AWF ratio are considered. Since, mere increase in interest income does not mean profitability, interest expense to AWF ratio is also considered. Technology & delivery channels require increased investment. To find out whether this leads to efficiency in use of working capital Net Profit ratio has been calculated For evaluation of efficiency of
sample banks Year on Year growth rates have been calculated viz. Net Profit per employee, Business per branch, Business per employee.

**Findings on Profitability**

1. The difference between cost of transaction through teller costing Rs. 1 per transaction and cost of transaction through ATM costing Rs. 0.45 per transaction was worked out for each sample bank. Saving in transaction cost was 55 percent.

2. The correlation between Net Profit and ATM transactions was worked in case of each sample bank. Near 1 positive correlation indicating there a strong correlation between use of delivery channels and sample bank performance.

3. Selected ratios and growth rates were worked out for each bank.

**Recommendations on Profitability of banks**

1. Because of the saving, and the positive correlation between the net profit and ATM transactions, more and more banks should provide ATM facilities to its customers.

2. From the study it is revealed that due to different delivery channels, the cost income ratio has shown decreasing trend along with the interest expenditure while the net interest income margin have been showing a increasing trend. As delivery channels help in facilitating competition, banks should go for implementation of more delivery channels for enhancing the profit, retaining old customers and bringing new customers to the banks fold.

3. Higher return on investment enables the share holders to continue with the bank. Similarly, return on assets also shows the capability of the management to manage earnings. As the study reveals that due to delivery channels both these important indicators show increasing trend, more and more banks should go for providing better facilities through various delivery channels.

4. It is revealed that CBS helps in enhancing non-interest income of the bank which finally increases the net profit. The study shows that there
has been increase in these two aspects due to implementation of delivery channels. Therefore, it is recommended that banks should go for implementing more and more delivery channels.

5. From the study it is further revealed that the business per employee and net profit per employee show increasing trend during the period of study. As delivery channels have helped in increasing the per employee business and net profit of selected banks, more and more banks should go for implementation of delivery channels.

**Recommendations to enhance use of delivery channels by creating awareness**

1. There is scope for banks to make efforts to encourage, motivate & develop strategies for groups/categories of customers to use delivery channels through wide publicity through mass media, arranging awareness training programmes, imparting practical training regarding security aspects of delivery channels. Setting up help desks to assist customers etc.

**Recommendations on ATM**

1. The study reveals that majority problems faced by customers was due to technical aspects. Hence, there is need for banks to maintain ATM properly. Preventive maintenance is a must. Banks can develop ATM status monitoring solution. Cash replenishment schedules especially on holidays must be worked out carefully.

2. Banks may set up new ATM centers or increase no. of ATMs in the center. Banks must ensure that ATMs are placed road touch with parking facilities.

3. Banks can think of installing biometric ATMs.

**Recommendations for Operational problems**

1. To enhance security in ATM centers banks can appoint security guards for duty 24 X 7, area inside & outside ATM center should be under surveillance of CCTV cameras, ensure enough and proper lighting in the ATM centre, siren and alarm system must be installed in the center.
ATMs should not be located in isolated spots, customer care numbers must be operational & must respond etc.

**Recommendations on Financial problems of ATM**
1. Since cash withdrawal limit from ATM is too less and charges for 6th transaction onwards in a month through ATM is on higher side, both set in conformity with directives of the RBI, Banks may take up the matter with the RBI to enhance the withdrawal limits and reduce or eliminate charges from 6th transactions onwards.

**Recommendations on Mobile Banking**
1. Banks and telcos must coordinate together to improve quality of services.
2. Banks must ensure that SMSes do not reach at odd hours and complete messages are received.
3. There is need to increase number of facilities through Mobile Banking.

**Recommendations on Internet banking**
1. No. of services should be increased with due consideration that all services work properly within time limits efficiently.

**Recommendations for Staff problems**
1. Since staff faces difficulty in guiding, convincing and encouraging customers w.r.t. to delivery channel usage, training must be given to them to update their knowledge.
2. TJSB & BoB staff stated that more facilities should be provided through delivery channels for benefit of customers.
3. Prior to buying ATMs, banks must first evaluate size of currency chest requirements
4. Banks could increase number of ATMs with parking facilities & place them in prominent places.

**Recommendations to Regulatory Authorities**
1. Analysis of profitability of Commercial & Co-operative Banks w.r.t. delivery channels should be included in the Report on Trends and Progress of banking in India by the RBI.
2. Analysis of profitability by banks in their own Annual Reports should be published with particular emphasis on technology and delivery channels.

3. RBI should publish reports on new technology areas like cloud computing, delivery channels like kiosk to motivate banks.

**Contribution to subject and body of knowledge**

The study tried to examine various socio-economic, usage patterns and factors that influence the adoption or non-usage of electronic delivery channels such as ATMs, internet banking, & mobile banking in Indian context. This study is undertaken to find out the impact on customer services and profitability due to delivery channels. The perspective of the bank officers and outlook of customers are worth considering. The contribution of this research is definitely significant as it is a micro level study based on primary data. The problems highlighted in the field work may be of general nature but creates serious problems at the bank level. It is also the responsibility of the RBI to take care of co-operative banks along with other SCBs. Most of the suggestions are of practical nature. If they are brought in practice sample banks will benefit. Study reveals several managerial implications such as identification of appropriate target segments, best ways of promoting delivery channels, areas for improvements in deployment of such services by banks. The results of this study will be useful to practitioners and academicians in this area.

**Directions for future research**

Studies can be taken up exclusively on Co-operative Banks, to fill the research gap. More and more comparative studies of SCBs and Co-operative Banks should be taken up. Apart from the three delivery channels, studies on other channels like phone banking, kiosks, CDMs etc. can be undertaken. Impact studies on customer services & customer satisfaction in rural areas, how delivery channels can be effectively used for financial inclusion can be taken up.
Conclusion on impact of delivery channels on profitability and customer Services

It was observed that delivery channels have invariably had a positive effect on profitability, though this positive effect in some cases has been outweighed by negative effects on profitability due to factors other than delivery channels. Delivery channels have a positive impact on customer service. Banks can improve the services by attending to problems faced by customers and staff as revealed in this study.

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