International Journal of Applied Engineering Research ISSN 0973-4562 Volume 10, Number 15 (2015) pp 35368-35372

Impact Of Mobile Banking Technology On The Operational Efficiency Of Indian Banks

A.R.SHANMUGA PRIYA

Research Scholar Research & Development Centre, Bharathiar University, Coimbatore, Tamilnadu,India.
sasesha2003@gmail.com

DR.R.KRISHNARAJ,

Assistant professor, SRM University, Chennai, India.
drrkraj6@gmail.com

Abstract
"Drive in Technology: Pool in Profits". The introduction of technology in any firm, company, organization, Institution etc., will surely enhance the profitability through maximizing the operational efficiency. Similarly the mobile banking has also contributed to the increased operational effectiveness of banks but accuracy in results of this technology in improved operational profit of banks still remain theorize. This paper aims at finding the impact of mobile banking technology on the operational efficiency of banks in India.

Keywords: mobile banking, operational efficiency, bank performance, m-transactions

INTRODUCTION

Though bank has its history back to centuries, the rapid growth of the banks is fastened only in the past two decades that is after the advancement of technology. After LPG that is liberalization, privatization and globalization, the global Industrial growth has touched peaks which drew channel for the need of increase in the number of banks, number of branches, number of products etc., Also the urge for easy processing of bank transaction become a obstacle wherein the technology filled the lacuna. The present situation is that day by day the number of new banks, NBFC's, Private financial Institutions are entering the Banking Industry and the reason behind is that the risk in the finance business is reduced because of technology. The percentage of potential new customers to be explored is high because earlier people don't even prefer having a bank account because of lack of technology. Due to the advent of plastic money that is debit cards, credit cards etc., Online banking, Mobile banking, ATM's, Deposit machines etc., people prefer making use of these facilities and avoid the risk of holding cash in hand. The penetration of technology into the banking industry benefits the banking customers as well as the banks by reducing its operational expenses and speeding up the banking process. In India situation is that the private sector banks are more techno-tailored and the public sector banks are slow in adopting technology. Mobile Banking technology is recently getting its fame among Indian Banking Customers though introduced a decade ago. Mobile banking has also resulted in the increase of E-commerce and E-Trade but the contribution of this technology to the profitability of banks is yet to be compared and contrasted.

REVIEW OF LITERATURE

De Young (2001a, 2001b, 2001c and 2005) analyzed systematically the financial performance of pure-play Internet banks in U.S. The study found relatively lower profits at the Internet-only institutions than the branching banks, caused in part by high labor costs, low fee based revenues and difficulty in generating deposit funding. However, consistent with the standard Internet banking model, the results indicated that Internet-only banks tended to grow faster than traditional branching banks. Internet-only banks have access to deeper scale economies than branching banks and because of this, they are likely to become more financially competitive over time as they grow larger. Delgado et al. (2004 and 2006) found similar results for Internet-only banks in the EU. Nevertheless, the magnitude of technology based scale economies found in Delgado et al. (2004 and 2006) was substantially larger than that estimated by De Young studies.

Sathye (2005) investigated the impact of the introduction of transactional Internet banking on performance and risk profile of major credit unions in Australia. Similar to the results of Sullivan (2000), the Internet banking variable didn't show a significant association with the performance as well as with operating risk variable. Thus, Internet banking didn't prove to be a performance enhancing tool in the context of major credit unions in Australia. It neither reduced nor enhanced risk profile.

Hernando and Nieto (2005) examined the performance of multichannel banks in Spain between 1994 and 2002. The study found higher profitability for multichannel banks through increased commission income, increased brokerage fees and (eventual) reductions in staffing levels and concluded that the Internet channel was a complement to physical banking channels. In contrast to earlier studies, the multichannel banks in Spain relied more on typical banking business (lending, deposit taking and securities trading). The adoption of the Internet as a delivery channel had a positive impact on banks' profitability after one and a half years of

adoption. It was explained by the lower overhead expenses and in particular, staff and IT costs after the same period.

Donner and Tellez (2008) did a study on mobile banking and economic development where they sought to link adoption, impact, and use. The study established that through offering a way to lower the costs of moving money from place to place and offering a way to bring more users into contact with formal financial systems, m-banking/m-payments systems could prove to be an important innovation for the developing world. However, the true measure of that importance required multiple studies using multiple methodologies and multiple theoretical perspectives before answering the questions about adoption and impact.

Egland et al. (1998) was the first important study, which estimated the number of US banks offering Internet banking and analyzed the structure and performance characteristics of these banks. It found no evidence of major differences in the performance of the group of banks offering Internet banking activities compared to those that do not offer such services in terms of profitability, efficiency or credit quality. However, transactional Internet banks differed from other banks primarily by size.

In contrast to the results of Egland et al. (1998), Furst et al. (2000a, 2000b, 2002a and 2002b) found that banks in all size categories offering Internet banking were generally more profitable and tended to rely less heavily on traditional banking activities in comparison to non-Internet banks. An exception to the superior performance of Internet banks was the de novo (new start-ups) Internet banks, which were less profitable and less efficient than non-Internet de novos. The authors concluded that Internet banking was too small a factor to have affected banks' profitability. Sullivan (2000) found that click and mortar banks in the 10th Federal Reserve District incurred somewhat higher operating expenses but offset these expenses with somewhat higher fee income. On average, this study found no systematic evidence that banks were either helped or harmed by offering the Internet delivery channel. Similar to the results of Furst et al., this study also found that de novo click and mortar banks performed significantly worse than de novo brick and mortar banks.

Alkhatib (2012) studying the financial performance of Palestinian commercial banks listed on Palestine securities exchange (PEX) measured financial performance using three indicators; Internal–based performance measured by Return on Assets (ROA), Market based performance measured by Tobin's Q model (Price / Book value of Equity) and Economic–based performance measured by Economic Value add. The study employed the correlation and multiple regression analysis of annual time series data from 2005-2010 to capture the impact of bank size, credit risk, operational efficiency and asset management on financial performance measured by the three indicators, and to create a good-fit regression model to predict the future financial performance of these banks. The study rejected the hypothesis claiming that "there existed statistically insignificant impact of bank size, credit risk, operational efficiency and asset management on financial performance of Palestinian commercial banks".

On overall, the divergence between different approaches is diversified across the studies and the use of a particular model should be usually based on environmental factors and specific features of an industry. Banker et al. (1986) stated that the Data Envelopment models are very useful for the cases when the firm managers have several objectives because of the special feature of DEA to deal with multiple inputs and outputs. By applying DEA to Missouri Banks, Yue (1992) concluded that the main advantage of these analyses is the capability of efficiency scores to be independent from the units in which inputs and outputs are measured. Papers as Rangan et al. (1988), Vassiloglou and Giokas (1990), Hassan et al. (1990), Camanho and Dyson (1999) were one of the significant ones which by explicitly considering the mix of resources used and services provided by individual banks, succeeded not only in identifying inefficient branches, but also in locating specific areas of inefficiency at each branch.

Cruz et al. (2010) identify the difference between m-banking and m-payments and argue that, if a bank is not directly involved in the instrumental gratification of a service offered, it is usually called a ''mobile payment (m-payment).'' Examples of such services include payments through overhead-priced SMS (e.g., ring tones) prepaid account loading (e.g., used for cinema tickets), or a charge made to the subscriber's account (e.g., credit card or invoice-based payment mechanism).

RESEARCH METHODOLOGY

The main objective of the study is to find whether the increase in use of mobile banking by the bank customers positively influences the profitability of the banks which in turn proves the operational efficiency of banks. Also the use of mobile banking technology among public sector banks, private sector banks and foreign banks is compared. The data used for the analysis is secondary from the website of reserve bank of India and the data from the annual reports of the particular banks. The primary limitation of the study is that only the banks in India is considered and hence cannot be generalized globally. The other limitation is that branch banking performance is not discussed as the performance of bank as a whole is analyzed.

DATA ANALYSIS AND INTERPRETATION

RBI permitted banks to facilitate mobile banking to customers on October 2008 by issuing a set regulatory and supervisory guideline. From 2008 to 2015 there is increase in number of mobile banking users which is minimal. But the increase in mobile banking technology would contribute a lot to the profits of the bank. The growth or the changes in the efficiency of banks due to mobile banking is analyzed by taking into account 10 public sector banks, 10 private sector banks and 10 foreign banks. The ratios like Operating Profit, Net profit and EPS are compared with number of mobile banking users and mobile banking transaction volume. Also mobile banking in Public sector banks, Private sector banks and Foreign banks are compared and contrasted. Percentage Analysis, Comparative Analysis and Trend Analysis are the tools used in the study.

Table.1 – Comparison of Electronic Transactions and Profitability of Private Sector Banks

S. No	Name Of the Bank	Volume Of Transactions (in No's)	Value Of Transactions (in millions)	Operating Profit (in Cr)	PAT (in Cr)	EPS (in Rs)
1	HDFC	16696688	1357302.55	17404.47	10216	42.1
2	ICICI	13061104	860390.12	19720	11175	19.32
3	AXIS	9676651	657946.23	13385.44	7357.82	31.18
4	KOTAK MAHINDRA	2401112	206880.16	4755.71	3065.08	39.4
5	KARNATAKA BANK	565690	29117.13	773.38	451.45	23.96
6	SOUTH INDIAN BANK	3191736	38284.05	816.26	307.20	2.28
7	FEDERAL BANK	1506991	83335.07	1634.77	1012.09	12.35
8	DHANALAKSHMI BANK	216754	10143.57	16.58	-241.47	nil
9	TAMILNADU MERCHANTILE BANK	412734	25442.47	607	379	-
10	KARUR VYSYA BANK	936838	59218.10	1.0184236	0.4642846	39.78
	Total / Average	48666298	3328059	59114.628	33722.63	210.37

NOTE: The Volume and Value of Transactions are for the month of May 2015 and Operating Profit, PAT and EPS are for the Fiscal Year 2014-2015. The EPS of TamilNadu Mercantile Bank is Unknown

Table.2 – Comparison of Electronic Transactions and Profitability of Public Sector Banks

S. No	Name Of the Bank	Volume Of Transactions (in No's)	Value Of Transactions (in millions)	Operating Profit (In Cr)	PAT (In Cr)	EPS (In Rs)
1	STATE BANK OF INDIA	37787300	1693705.69	38914	13102	17.55
2	ANDHRA BANK	1762091	105997.02	3298.44	638.44	7.67
3	CORPORATION BANK	1904896	125668.63	3027.45	584.26	6.97
4	INDIAN BANK	2297114	105496.31	3013.7169	1005.1744	21.62
5	INDIAN OVERSEAS BANK	2882662	155995.17	3322.34	(454.33)	nil
6	CANARA BANK	3598268	218366.10	6950.36	2702.6442	58.59
7	BANK OF BARODA	4579176	237553.79	5420.61	3398.44	15.83
8	VIJAYA BANK	891799	50537.80	1259.3	439.41	5.11
9	BANK OF INDIA	5844144	203962.30	7488	1709	26.57
10	SYNDICATE BANK	1951112	113175.73	4152.20	1667.08	26.69
	Total / Average	63498562	3010459	76846.417	24792.12	186.6

NOTE: The Volume and Value of Transactions are for the month of May 2015 and Operating Profit, PAT and EPS are for the Fiscal Year 2014-2015.

FINDINGS AND DISCUSSION

The weighted average analysis and percentage analysis shows that irrespective of the usage of technological banking the Earnings Per Share, Operating Profit and Profit after Tax fluctuates but even then both in private sector and public sector banks, the banks having larger volume and huge value of technological transactions possess the highest Earning per share. It can be viewed from Table.No.1 that HDFC Bank ranks number one having highest value and volume of technological transactions also cracks the same highest rank in earnings Per Share also. But Table 2 depicts that the trend is not the same in case of Public sector banks if EPS is considered for analysis. Even then the technological

profitability can be proved taking Profit after Tax into consideration for analysis. The Comparative analysis of Profit after Tax in Table 2 shows that the bank with large value and huge volume of technological transactions has the highest Profit after tax and Operating Profit. It can be derived from Table 2 that State bank of India has the highest Operating profit as well as Profit after tax with maximum technological transactions. Both public sector and Private sector banks reflect the technological profitability with highest value and heavy volume of transactions that had resulted in excessive Operating Profit, Profit after Tax and EPS.

CONCLUSION

Banks make massive investment in technology to satisfy their customers as well to attract new customers and also to maximize profits by controlling operating expenses through technological incubations. These Investments become a burden for banks when not properly utilized by the customers. The Indian Statistics display that not even half of the portion of banking customers use mobile banking. The reasons for non usage of mobile banking vary like non-adequate knowledge, need of costly instrument, risk factors mainly security risk, network problems, network charges etc., Banks to upgrade the use of mobile banking by more number of customers should make some contributions to create awareness among customers, to pull down the risk factors, to bring down service charges etc.,. Always Practice makes functioning easier, hence banks could make it a compulsion for all customers to make minimum mobile transaction which will help them practice mobile banking so that end results could be that the customers realize the convenience of mobile banking and continue to adopt it.

FUTURE RESEARCH

Recently most of the banks have introduced their own Mobile Apps which has more advantages and through which more than seventy five transactions can be done. The same research can be done with Mobile banking Apps. Also the same research can be done taking into account foreign sector banks. Meta analysis can be done with different financial data of different banks.

REFERENCES

1. Alkhatib, K. (2012). Financial Performance of Palestinian Commercial Banks. International Journal of Business and Social Science, Vol. 3 No. 3.
2. Banker R., Conrad R. and Strauss R., 1986, A comparative application of data envelopment analysis and translog methods: An illustrative study of hospital production, Management Science 32(1), pp.30-44, January.
3. Camanho A., Dyson R., 1999. Efficiency, Size, Benchmarks and Targets for Bank Branches: An Application of Data Envelopment Analysis. The Journal of the Operational Research Society. Vol. 50, No. 9., pp. 903-915.
4. Cruz, P., Neto, L.B.F., Muñoz-Gallego, P., Laukkanen, T., 2010. Mobile banking rollout in emerging markets: evidence from Brazil. Int. J. Bank Mark. 28 (5),342–371.
5. DeYoung, R (2001a), "The Financial Performance of Pure Play Internet Banks", Economic Perspectives, Vol. 25 No. 1, pp. 60-75.
6. DeYoung, R. (2001b), "The Financial Progress of Pure-Play Internet Banks", BIS Papers No 7, November.
7. DeYoung, R. (2001c), "Learning-by-Doing, Scale Efficiencies, and Financial Performance at Internet-Only Banks", Working Paper 2001-06, Federal Reserve Bank of Chicago, September.
8. DeYoung, R. (2005), "The Performance of Internet-based Business Models: Evidence from the Banking Industry", Journal of Business, Vol. 78 No. 3, pp. 893-947.
9. Donner,J. And Tellez, A. C. (2008), Mobile banking and economic development: Linking adoption, impact, and use, Asian Journal of Communication, 18(4), 318-322.
10. Egland, K. L., Furst, K., Nolle, D., E. and Robertson, D. (1998). "Banking over the Internet", Quarterly Journal of Office of Comptroller of the Currency, Vol.17 No 4, December.
11. Furst, K., Lang, W. W. and Nolle, D. E. (2000a), "Who offers Internet Banking?" Quarterly Journal, Office of the Comptroller of the Currency, Vol. 19 No. 2, June, pp. 27-46.
12. Furst, K., Lang, W. W. and Nolle, D. E. (2000b), "Internet Banking: Developments and Prospects", Economic and Policy Analysis, Working Paper No. 2000-9, Office of Comptroller of the Currency, September.
13. Furst, K., Lang, W. W. and Nolle, D. E. (2002a), "Internet Banking: Developments and Prospects", Working Paper, Center for Information Policy Research, Harvard University, April.
14. Furst, K., Lang, W. W. and Nolle, D. E. (2002b), "Internet Banking", Journal of Financial Services Research, Vol. 22 No. 1&2, August, pp. 93-117.
15. Hassan Y., Grabowski R., Pasurka C, Rangan N., 1990. Technical, Scale, and Allocative Efficiencies in U.S. Banking: An Empirical Investigation. The Review of Economics and Statistics. Vol. 72, No. 2., pp. 211-218.
16. Hernando, I. and Nieto, M. J. (2005), "Is the Internet Delivery Channel Changing Banks' Performance? The Case of Spanish Banks", Banco de Espana, Unpublished Manuscript.
17. Rangan, N., Grabowski R., Aly H. and Pasurka C., 1988. The technical efficiency of US banks. Economics Letters 28, pp 169-175.
18. Sathye, M. (2005), "The Impact of Internet Banking on Performance and Risk Profile: Evidence from Australian Credit Unions", The Journal of International Banking Regulation, Vol. 6 No. 2, February.

19. Vassiloglou M., Giokas D.,1990. A Study of the Relative Efficiency of Bank Branches: An Application of Data Envelopment Analysis. The Journal of the Operational Research Society. Vol. 41, No. 7., pp. 591-597.
20. Yue, P. 1992. Data Envelope Analysis and Commercial Bank Performance: A Primer with Applications to Missouri Banks. Federal Reserve Bank of St. Louis Review, pp. 31-45.