

Growth of onsite-offsite ATMs: A comparative study of public sector, private sector and foreign banks in India

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Abstract

The tendency of banking sector has evolved from cash economy and transformed to cheque economy which has further been converted to plastic card economy. With this concern there are several branches of onsite and offsite ATMs developed in India. Therefore now the technology is considered as the main contribution for the organizations success and as their core competencies. So, the banks are investing more on providing on the customers with the new technologies through e-banking. The main aim of the study is to highlight the theoretical framework and different kinds of ATMs services in Indian banking sector and growth of Onsite and Offsite ATMs of public and private sector banks and also to analyze the growth of onsite and offsite ATMs in foreign banks. Finally this study analyzed comparing of growth of onsite and onsite ATMs among public, private and foreign banks in India. The present study focused on secondary sources of data collection and to measure the reliability of data and applied compound growth rate and post doc test to analysis the comparison of onsite and offsite in public sector, private sector and foreign banks. To conclude, ATM is a machine which facilitates easily banking transactions to the customer, therefore technological advancement is needed to improve the growth and accessibility of onsite-offsite ATMs services in India. And also the public sector banks have highest number of onsite and offsite ATMs services compared to private sector banks and foreign banks.

Keywords: Onsite & offsite ATMs, Public sector banks, Private sector banks, foreign banks

1. Introduction

In the present state of affairs banking industry plays predominant role to the developments in information technology had an enormous effect in development of more flexible payment methods and more user-friendly banking services. Online banking and other electronic payment systems are new and the development and diffusion of these technologies by financial institutions is expected to result in a more efficient banking system. This technology offers to the institutions an alternative or non-traditional delivery channels through which banking products and services can be delivered to customers more conveniently and economically without diminishing the existing service levels. However the entry of private sector has posed the challenge of competitive environment to the public sector banks in India.

These study focused on public, private and foreign sector banks have brought with them the advanced banking technology with alternate delivery channels such as Phone Banking, Mobile banking, Internet Banking, Automated Teller Machines (ATM) etc. Out of all these e-banking services, the ever demanding and fulfilling the requirement of the customers is automated teller machines. So the efforts of the banks are to manufacture and install as much ATM's which could serve its services to the entire customers of the nation, an additional security device innovations are being made in the form of using camera inside the ATM which could compare the records with thumb impression (Bio-Metric) of the customer identification

for the purposes of safety in the areas of onsite and offsite ATMs.

The ATM industry consists of multitude of activities which is a major cause of making e-banking 24 hours service. In fact, electronic banking is profitable and possible due to services of ATMs because this service provides immense help to the customers in withdrawing cash from anywhere anytime. The management of ATM includes loading of ATM with cash, arranging of money with bank with which cash is loaded, service of car that delivers cash if it is offsite situated, providing insurance for all areas such as theft of cash from ATM. Due to large expense involved in setting and situating an ATM at a particular place, these services are now days offered by independent service providers like privately owned ATMs. The following is a list of businesses involved with ATMs services.

1.1 Kinds of ATM Service

The first ATM to be installed in India was by HSBC in 1987 at Mumbai. There are different kinds of ATMs used by the banks for the customers as follows:

- a) **Onsite and Offsite ATMs:** ATMs which are situated at the premises of the bank are known as onsite ATMs and the one that are located at some busy places are known as offsite ATMs like food worlds, railway station, bus stops, shopping malls, petrol pumps etc.
- b) **Stand alone and Net-worked:** ATMs which are not linked to the hub of the bank to which it belongs are stand

alone ATMs. But these ATMs are not popular now a days. Net-worked ATM on the other hand are those which are linked to the branch and also linked to the branches across the country means a customer of a particular bank can withdraw money from any branch and any bank and any city.

- c) **Dip-card and Motorized:** Where the customer is required to dip the card and take it back to do the transaction is known as dip card. The sensor of the machine identifies the customer and greets him with the voice. On the other hand, motorized ATMs are very prevalent among all. In this the customer inserts the card in the machine and takes it back when the transaction is over. In some machines immediately the card is taken back whereas in some machines the card automatically comes out when cash is withdrawn.
- d) **Front and Back:** Cash has to be regularly loaded in the ATM machines. In the front loading the door of the ATM compartment is closed and cash is loaded where as in back loading, it is done behind the ATM and a message is displayed that "please wait for some time. Some services are being carried on".

Therefore with this context, now days due to the high cost involved in installing the ATM machines, these services are provided by privately owned institutions. By sponsoring a privately owned ATM, financial institution takes the full responsibility of non-bank location ATM. These financial institutions bears all the risks associated with installation of ATM, placing the machine and including risks of frauds. So, all the privately owned ATM must have a sponsoring institution that carries such risk related to fraud, theft and cash mismanagement.

1.2 Review of Literature

The lot of research has been conducted on India and abroad studies related to growth of onsite and offsite ATMs in banking sector.

Chattopadhyay (2012) ^[1], this study was focused on customer preference towards use of ATM services in Pune city. This article depicts on ATM impacts the customer services and leads to better customer satisfaction. And to analyze the relationship between demographic variable and preference to use ATM, structured questionnaires used to collect the data from a convenience sample of 300 customers from three sample cooperative banks in Pune city. Frequency and percentage analysis and chi square tests are applied for data analysis and interpretation and also, charts and tables are prepared for better understanding of the findings in the banks of Pune city.

Mittal (2013) ^[3], this study was undertaken on computerization in banks- some issues. This paper shows how banks have now flourished into one-stop Supermarkets. Their focus is flowing from bulk banking to class banking with introduction of value added and customized products. Technology helps banks to create what appearances like a branch in a business building's lobby without taking to hire manpower for manual operations. These branches are 24 x 7 working which has been made possible due to ATMs, Tele banking, Internet Banking, E-banking and Mobile Banking. Finally this study concludes banking Innovation with special reference to technological up gradation. In the paper survey on use of several E-channels and issues related to customer satisfaction of e- banking services.

Kumar (2014) ^[5], this study was focused on technology-based banking services prevailing In Indian banking Industry - An overview and recent trends. This paper explains the electronic and telecommunication networks for delivering a wide range of value added products and services. The delivery channels include direct dial – up connections, private networks, public networks etc and the devices include telephone, Personal Computers including the Automated Teller Machines, etc. With the popularity of PCs, easy access to Internet and World Wide Web, Internet is increasingly used by banks as a channel for receiving instructions and delivering their products and services to their customers. This paper tries to explain the various technology based banking services (TBBS) prevailing in Indian Banking Industry and gives recent trends in growth and usage of such services in India

Meena (2015) ^[6], this study was conducted on automated teller machine – its benefits and challenges. This paper revealed on the major benefits and challenge us of ATMs services in Indian banking industry. This study mainly makes out, drawback of traditional banking services customers if it cannot be accessed easily instead of waiting for the bank to open or only for banking hours to do the work. Many customers are choosing banks which would provide them Automated Teller Machine facility. The ATM is a machine which facilitates banking transactions and makes the customers life peaceful and easy to withdraw and deposit of cash to the banks

Genevois (2015) ^[7], this study was emphasized on ATM location problem and cash management in automated teller machines. This paper provides a general review on studies, efforts and development in ATMs location and cash management problem. This forecasting model is based on historical cash demand data which is highly related to the ATMs location. So, the location and the cash management problem should be considered together ATMs are not only available in bank branches but also at retail locations. Another important factor is the cash management in ATMs. A cash demand model for every ATM is needed in order to have an efficient cash management system.

Thakare (2016) ^[8], this study was conducted on technological innovations in banking sector. These article interpret on various innovations in banking and financial sector are ECS, RTGS, EFT, NEFT, ATM, Retail banking, Debit and Credit cards, free advisory services, online banking, mobile banking and many more value added products and services. This paper also highlights the benefits and challenges of changing banking trends. Banks are investing heavily in adoption of these innovations. The need of hour is to design such a system that encourages the efficiency of investment in innovations and widens the gap between revenues and costs involved with reference to technological up gradation.

1.3 Objectives of the Study

The major objectives of the study are as follows:

1. To highlight the different kinds of ATMs services in Indian banking sector;
2. To analyze the growth of Onsite and Offsite ATMs of public sector banks;
3. To assess the growth of onsite and offsite ATMs of private sector banks;
4. To analyze the growth of onsite and offsite ATMs in Foreign Banks;

5. To compare the growth of onsite and onsite ATMs among public, private and foreign banks; and
6. To offer findings/suggestions for the light of the study.

2. Research Methodology

Research is considered as journey from unidentified to the identified phases. Methodology is the way to solve the research problem systematically. The present study is purely based on data gathered from secondary sources. The sources of secondary data were from various annual publications, bulletins, trends and progress reports and speeches of Reserve Bank of India (RBI), Indian Banking Association (IBA) Bulletins published by Indian Banks Association and Center for Monitoring and Indian Economy (CMIE). In addition to these books, articles published in journals, thesis submitted to the universities and working papers of various institutions also considered. Internet and other sources also been used. For the purposes of analyses of data used CAGR method and descriptive statistics. To compare the growth of onsite and offsite ATMs of public, private and foreign banks, post doc test is applied to interpret the results of data.

2.1 Analysis and Interpretation

1. Growth of Onsite & Offsite ATM – Public Sector banks

Table No. 1 shows that growth of onsite and offsite ATMs in public sector banks. Public sector banks constitute the major role in providing electronic banking services. The overall growth of onsite ATMs, numbering 3,33,308 branches, out of that the highest number of onsite ATMs numbering, 67,820 branches in 2015-16, as against the lowest number of onsite ATMs numbering 12902 branches in 2006-07 respectively. The growth of onsite ATMs in public sector banks have recorded 38.05 per cent growth in 2007-08, and it was declined to 14.32 per cent in 2015-16. In the context of overall growth of offsite ATMs, numbering, 2, 47,814 branches, out of that the highest number of offsite ATMs numbering, 55,621 branches in 2015-16, as against the lowest number of offsite ATMs numbering 8,885 in 2006-07 respectively. The growth of offsite ATMs in public sector banks has recorded 30.13 per cent growth in 2007-08, and it was declined to 12.36 per cent in 2015-16. These shows public sector banks are having largest share of onsite ATMs compared to the offsite ATMs in India.

Table 1: Growth of Onsite & Offsite ATM – Public Sector banks

Year	Onsite ATM	Growth	Offsite ATM	Growth
2006-07	12902	-	8885	-
2007-08	17379	38.05	9898	30.13
2008-09	23797	34.59	16883	32.66
2009-10	29795	31.04	19692	30.94
2010-11	28150	29.19	19239	23.20
2011-12	31685	27.91	23153	29.16
2012-13	25596	20.23	16089	21.21
2013-14	31428	18.00	23034	29.22
2014-15	64756	17.46	54920	16.13
2015-16	67820	14.32	55621	12.36
Total	333308	-	247814	-

Source: Trends and Progress Report of RBI – Various issues.

2. Growth of Onsite & Offsite ATM – Private Sector banks

Table No. 2 represents that growth of onsite and offsite ATMs in private sector banks. Private sector banks play a vital role in providing electronic banking services. The overall growth of onsite ATMs, numbering 1,62,680 branches, out of that the highest number of onsite ATMs numbering, 31,319 branches in 2015-16, as against the lowest number of onsite ATMs numbering 3,879 branches in 2006-07 respectively. The growth of onsite ATMs in private sector banks have recorded 28.98 per cent growth in 2007-08, and it was increased up to 39.56 per cent in 2015-16. In the context of overall growth of offsite ATMs, numbering, 2, 00,238 branches, out of that the highest number of offsite ATMs numbering, 38,825 branches in 2015-16, as against the lowest number of offsite ATMs numbering 5,988 in 2006-07 respectively. The growth of offsite ATMs in private sector banks has recorded 26.85 per cent growth in 2007-08, and it was increased to 40.12 per cent in 2015-16. These shows private sector banks are having largest share of offsite ATMs compared to the onsite ATMs in India.

Table 2: Growth of Onsite & Offsite ATM – Private Sector banks

Year	Onsite ATM	Growth	Offsite ATM	Growth
2006-07	3879	-	5988	-
2007-08	5,166	28.98	7,480	26.85
2008-09	8,603	33.18	9,844	28.92
2009-10	8,007	32.53	11,518	31.60
2010-11	15539	20.93	20762	37.00
2011-12	15309	17.42	28413	33.17
2012-13	22297	13.46	24740	32.61
2013-14	26136	11.83	14254	26.54
2014-15	28709	10.87	38414	39.86
2015-16	31319	39.56	38825	40.12
Total	162680	-	200238	-

Source: Trends and Progress Report of RBI – Various issues.

3. Growth of Onsite & Offsite ATM – Foreign banks:

Table No.3 indicates that growth of onsite and offsite ATMs in foreign banks. Foreign sector banks play a prime role in providing electronic banking services. The overall growth of onsite ATMs, numbering 21,135 branches, out of that the highest number of onsite ATMs numbering, 4,328 branches in 2014-15, as against the lowest number of onsite ATMs numbering 269 branches in 2006-07 respectively. The growth of onsite ATMs in foreign banks have recorded 8.03 per cent growth in 2007-08, and it was decreased to 4.26 per cent in 2015-16. In the context of overall growth of offsite ATMs, numbering, 16,925 branches, out of that the highest number of offsite ATMs numbering, 3,012 branches in 2013-14, as against the lowest number of offsite ATMs numbering 765 in 2006-07 respectively. The growth of offsite ATMs in foreign banks has recorded 7.59 per cent growth in 2007-08, and it was decreased negatively i.e., -1.73 per cent in 2015-16. These shows foreign banks are having largest share of onsite ATMs compared to the offsite ATMs in India.

Table 3: Growth of Onsite & Offsite ATM – Foreign banks

Year	Onsite ATM	Growth	Offsite ATM	Growth
2006-07	269	-	765	-
2007-08	270	8.03	784	7.59
2008-09	779	6.37	747	2.48
2009-10	1286	4.33	1,081	-4.72
2010-11	1736	5.51	1679	44.71
2011-12	2250	3.21	2232	-4.38
2012-13	3446	-1.10	2725	-2.35
2013-14	3686	-1.76	3012	-3.32
2014-15	4328	-3.33	1751	2.07
2015-16	3085	4.26	2149	-1.73
Total	21135	-	16925	-

Source: Trends and Progress Report of RBI – Various issues.

4. Comparison of Onsite and onsite ATMs among public, private and foreign banks

Table No.4 depicts that comparison of onsite and offsite ATMs among public sector, private sector and foreign banks in India. In the context of public sector banks, the overall growth of onsite and offsite ATMs are, numbering 3, 33, 308 branches and 2, 47, 814 branches respectively. In the context of private sector banks, the overall growth of onsite and offsite ATMs are, numbering, 1, 62, 680 branches and 2, 00238 branches respectively. In the context of

Table 4: Comparison of Onsite and onsite ATMs among public, private and foreign banks

Banks	Growth of ATMs	
	On-site ATMs	Off-Site ATMs
Public Sector Banks	333308	247814
Private Sector Banks	162680	200238
Foreign Banks	21135	16925

Source: Trends and Progress Report of RBI – Various issues.

Foreign banks, the overall growth of onsite and offsite ATMs are, numbering 21,135 branches and 16,925 branches respectively. This analysis shows that public sector banks having highest number of onsite and offsite ATMs services compared to private sector banks and foreign banks.

2.2 Post Hoc Test

A comparison of onsite and offsite ATMs among public sector, private sector and foreign banks in India, the post hoc test Table No. 4 (a) revealed that in case of first means, there is no significant difference between the variables of public sector banks to private sector banks and there is a significant differences between public sector banks to foreign banks. In view of second means, there is no significant difference between the private sector banks to public sector banks and private sector banks to foreign banks. In case of third means, there is a significant difference between foreign bank to public sector bank and foreign bank to private sector bank.

Table 4 (a): Post Hoc test (Turkey approach)

Dependent Variable	(I) Banks(J) Banks type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
I Means	Public Private	8.4895	0.61168	.361	-6.6765	2.3655
	Foreign	2.7385*	0.62529	.000	1.1881	4.2883
II Means	Private Public	-4.84897*	0.61168	.110	-2.3655	6.6765
	Foreign	-1.8801	0.61068	.013	4.1524	3.3638
III Means	Foreign Public	-2.7385*	0.61168	.000	4.2888	-1.1881
	Private	1.8514	0.59468	.000	-3.3638	-4.152

*. The mean difference is significant at the 0.05 level.

3. Finding of the Study

3.1 The following are the major findings of the study

- In the context of public sector banks, the overall growth of onsite and offsite ATMs are, numbering 3, 33,308 branches and 2, 47, 814 branches respectively.
- The growth of onsite ATMs in public sector banks has recorded 38.05 per cent growth in 2007-08, and it was declined to 14.32 per cent in 2015-16.
- The growth of offsite ATMs in public sector banks has recorded 30.13 per cent growth in 2007-08, and it was declined to 12.36 per cent in 2015-16.
- In the context of private sector banks, the overall growth of onsite and offsite ATMs are, numbering,1,62,680 branches and 2,00238 branches respectively.,

- .The growth of onsite ATMs in private sector banks has recorded 28.98 per cent growth in 2007-08, and it was increased up to 39.56 per cent in 2015-16.
- The growth of offsite ATMs in private sector banks has recorded 26.85 per cent growth in 2007-08, and it was increased to 40.12 per cent in 2015-16.
- In the context of foreign banks, the overall growth of onsite and offsite ATMs are, numbering 21,135 branches and 16,925 branches respectively.
- The growth of onsite ATMs in foreign banks has recorded 8.03 per cent growth in 2007-08, and it was decreased to 4.26 per cent in 2015-16.
- The growth of offsite ATMs in foreign banks has recorded 7.59 per cent growth in 2007-08, and it was decreased negatively i, e., -1.73 per cent in 2015-16.

3.2 Suggestions for the study

The following are the suggestion for the study

- ATM services plays vital role in the banking activities. The various suggestions for improving the effectiveness of the ATM services in public and private sector banks.
- Banks must make concentrated efforts to educate female customers to use ATMs. For this purpose banks must hold training programmes for customers from time to time.
- Banks may also draw up special incentive schemes to induce customers to make maximum use of ATMs.
- Number of banks own ATMs must be increased. As the number of ATMs is less customers are forced to use off-site ATMs which form part of shared network and have to pay higher charges after the 5th transaction in a month.
- ATMs must be maintained properly by banks. Banks must ensure that uptime is near 100 %. Air conditioners, UPS systems, key boards, Monitors etc. must always be in proper working condition in India.
- Cash refilling at proper intervals must be made to ensure that cash does not get over in the cash stacks. This care should be taken over weekends and during holidays.
- Problems of technical nature resulting in debiting of customer account without dispensing of cash should be rectified urgently. Care must be taken to ensure that such problems do not occur at all.
- Paper for receipt printing must always be available in the ATM centre and efforts should be made to refill the paper roll in time to avoid inconvenience to customers. Banks should ensure that the printing on the paper receipt is clear and of good quality.
- The system of transacting through ATM must be speedy, accurate and reliable. Banks must ensure that the technology adopted by them is the latest and most efficient.

4. Conclusion

The wind of liberalization, globalization, and privatization has opened new vistas in the banking industry in the generation of an intensely competitive environment. Today, ATMs have been popularized across the globe. The Automated Teller Machine has by now become part of daily life. Banking through ATM has not only transformed traditional banking but has also brought a paradigm shift in the attitude of banks to banking operations. The banking sector in India has introduced E-banking in a phased manner. Foreign banks are the pioneers in e-banking, private banks introduced it in a big way and public sector banks are in the process of transformation from traditional banking to E-banking. The present analysis indicates that The banking industry should take steps to make its ATMs safe and secure for its customers with these public sector banks having highest number of onsite and offsite ATMs services compared to private sector banks and foreign banks so private sector banks and foreign banks they develop some strategy to improve the number of onsite and offsite ATMs braches services in India.

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