7. A LITERATURE REVIEW OF BANKING SECTOR IN INDIA

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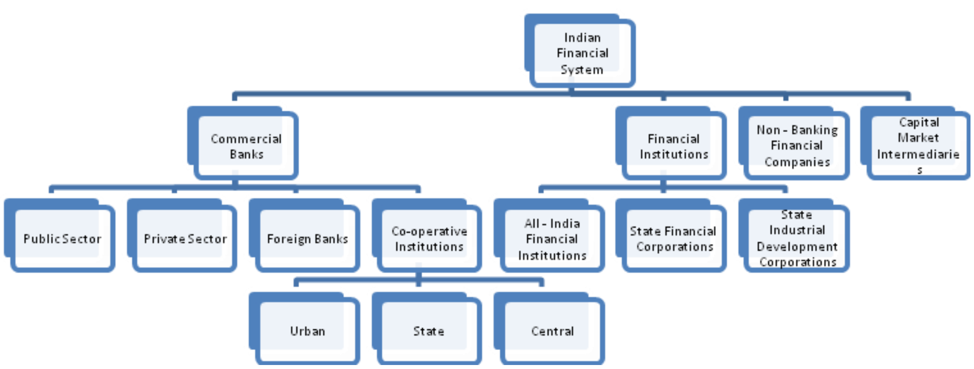
Introduction:
Several research have been conducted to analyze the different aspects of performance of banks in India. But there are very few research and literature available on the subject related to financial reforms and its impact on Indian banks. Some of the available literature related to Banking sector of India are taken in to consideration for review.

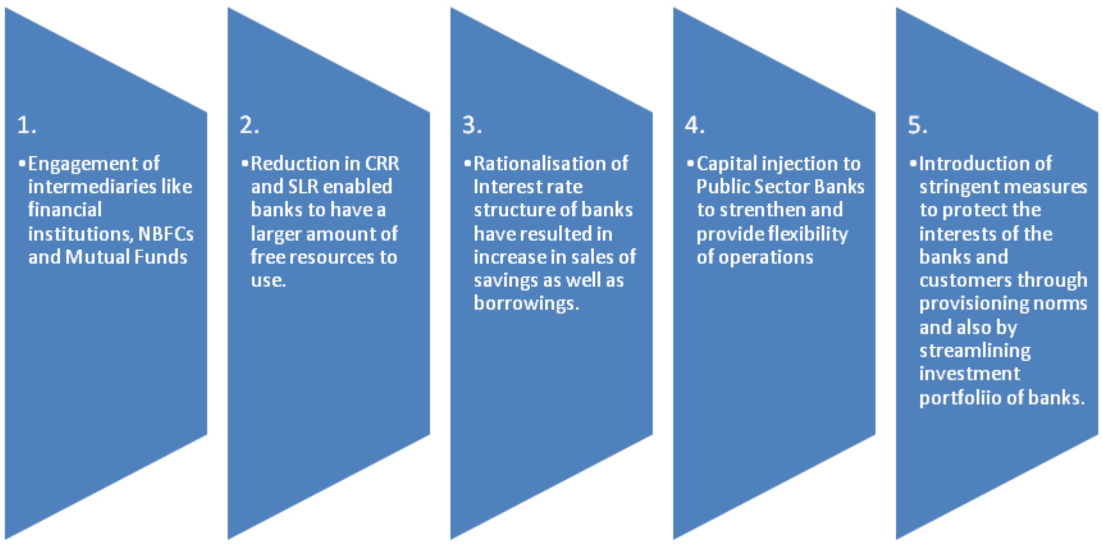
Objective :
1. To study Indian banking structure.
2. To study Indian banking growth

Literature review:
(Deolalkar, 1999) the former Managing Director of State Bank of India; wrote extensively about the Indian Banking sector in his paper - The Indian Banking Sector: On the Road to Progress. In Asian Development Bank (ed). He wrote about how India's banking structure is different from other Asian banks because of the diverse culture, demography and also the economic diversity amongst the country's vast population. The diversity not only dominates buying behavior for products but also to a large extent the behavior related to savings and investments too. Around 35 percent of the country's population is urban; which means there is a huge population residing in the rural areas practicing Agriculture or allied businesses and thus creating a huge demand for banking services in Rural India.
In the same working paper, Deolalkar puts across the structure of the Indian Banking System. The below figure describes the structural framework of the Indian Banking system.



Ninety two percent of the country's banking business was under the State control in 1999 while the remaining was with the Private and Foreign banks. These figures show how the rural scenario dominated not only the product offerings of these State controlled banks but their attitudes towards customer service.
In fact, (Sathye, 2003) in his paper examines the efficiency of banks in developing countries with reference to India. He compares the efficiency scores of 3 banks, each publicly, privately and foreign owned to find which type of bank is more efficient in its operations. Dr. Milind Sathye creates two models to exhibit the changes in the efficiency scores on changing input and output parameters. The research also proves that contrary to assumptions; the efficiency score of the private sector commercial banks is less than the foreign and public sector banks in the country. Sathye recommends that the policy on reducing NPA would be effective in raising the competitiveness of Indian banks on an International Platform. Thus Sathye's study recommends that the measures taken by the banks to curtail the NPAs and also to promote voluntary retirement schemes to reduce the excess human resource employed in the sector.

Another paper (Bhide, Prasad, & Ghosh, 2001) examines the challenges faced by the Indian Banking sector and how the reforms in the banking sector have empowered the banks to rise to these challenges. The authors discuss how during the independence era, major reserve portfolio mobilization was the responsibility of the households; as the advent of industries wasn't a very big contributor to the economy. Thus the resource mobilization was majorly done through depositing the money into the bank account. That was indeed the most preferred way to save money during that time. In the early post independence era; urban population were the major contributors to the banking sector and rural India wasn't exposed to the services offered by Banks. The then Five Year Plan aimed at equitable credit allocation to urban, semi – urban and rural areas which unfortunately as found in the 1954 All India Debt and Investment Survey wasn't a near reality if reforms weren't introduced. The paper describes in 5 steps the effects of reforms on the Indian Banking sector.



Although the reforms have strengthened the banks; there are certain weaknesses that the paper discusses. The authors (Bhide, Prasad, & Ghosh, 2001) note that the speed at which the structural reforms took place was less than the speed at which deregulation of the interest rates happened. This resulted in some of the NBFCs providing higher interest rates on deposits but subsequently charging higher interest rates on lending. The NPA situation in the sector also needed to be considered. Reforms have brought in a high degree of freedom to banks to bring them to a competitive level with international banks. But the paper recommends that reforms need to be introduced with a vigilant attitude and thus this vigilance itself has to become the price paid for the freedom provided to the banks through these reforms.

These are not the only challenges that the Indian Banking Sector have faced or are facing. (Bhide, Prasad, & Ghosh, 2001) have described a few more challenges in the same work.

They speak about 14 emerging challenges that have to be combated by the sector to sustain and succeed.

(Tarapore, 1999) puts forth another proposal in the concept of narrow banking. He suggests that the incremental resources of weak banks be restricted to investments in high return securities of minimum risk and take care of the liquidity needs. However (Ghosh and Saggar, 1998) have listed the cons of this proposal namely for reasons stating it exposes banks to high interest rates and the assumption that Government securities will have zero default list might be proven fatally wrong.

NPA's have been a consecutive problem in Indian Banking industry. There are infirmities in recovery of existing debts, legal provisions are inadequate in case of bankruptcy and foreclosures and court proceeding are tedious and rampant with red tapeism. Large number of loans given to small and large enterprises by the PSBs make these banks weak and vulnerable to the conditions of both – National and International markets. The recovery drive gets affected by the ambigious nature of accountability definition and responsibility of write – offs. Thus even NPAs call for a restructuring along with a demand of increase in managerial efficiency through better hiring and training (Jalan, 2001).

In short, (Bhide, Prasad, & Ghosh, 2001) conclude that though the process of reforms is tedious; it is essential for the ever evolving dynamic banking sector to sustain its growth.

In this dynamic scenario of banking; structural and other reforms have played the role of catalyst in changing not only the nature of products and services but also have brought about drastic changes in consumer behavior. The biggest challenges in front of banks, especially the PSBs is to serve a market which is diverse in multiple parameters like geographical area, cultures, earning capacities, religion, social status etc. (Manikyam, 2004).

(Chawla, Sehgal, 2012) have found that age has a statistically significant effect on choice of bank along with gender. As regards gender; it is found to have a statistically significant effect on preference towards banks too.

(Manikyam, 2004) further notes that following traditional banking systems will not take us anywhere and that it is essential that Indian banks focus on product innovation and technology upgradation to rise to the current challenges in Banking.

A paper by (Mishra, Harsha, Anand, & Dhruva, 2012) uses the approach of CAMELS (Capital Adequacy, Assets Quality, Management Soundness, Earnings, Liquidity and Sensitivity to Market Risk) to analyze the soundness of the Indian Banking Sector. The research studies a good mix of Private and Public sector banks selected based on the CNX bank index.

OVERALL GRAND RANKING BASED ON THE CAMEL PARAMETER

	Axis	BOB	Canara	BOI	HDFC	ICICI	IDBI	KMB	Oriental	PNB	SBI	Union Bank
Capital Adequacy Parameter - Group Ranking	12	2.33	2.33	6	10	2.33	1	5	11	6	8.5	8.5
Asset Quality Parameter Group Ranking	4	8	6	11	1	5	12	2	3	7	10	9
Management Quality Parameter Group Ranking	3.5	9	10	7	3.5	1	2	5	11	6	8	12
Earnings Quality Parameter Group Ranking	4	8	6	10	1	11	6	5	3	2	12	9
Liquidity Parameter Group Ranking	2.5	2.5	7	4.33	4.33	4.33	7	11	9	10	1	12
Average	5.20	5.97	6.27	7.67	3.97	4.73	5.60	5.60	7.40	6.20	7.90	10.10
Rank (Small Number represents good Performance)	3	6	8	10	1	2	4	5	9	7	11	12

*Source: Research Journal of Management Sciences - ISSN 2319–1171Vol. 1(3), 9-14, October (2012) * Mishra Aswini Kumar, G. Sri Harsha, Shivi Anand and Neil Rajesh Dhruva*

The research finds that ICICI, Axis Bank and HDFC lie between almost same ranks. The paper also concludes that private sector banks are growing at faster pace than the public sector banks and that private banks.

That brings us to the topic of competition in Indian Banking as studied by (Bhide, Prasad, & Ghosh, 2001) . There are in total 27 public sector banks, 40 private sector banks and 33 foreign banks covered in the study. The study states that in 2003 – 04 public sector banks held 75 percent of the banking sector while 25 percent was held by private and foreign banks.

The main reason for the share of PSBs going down from 90 percent to 75 percent were the reforms in the banking sector as observed by (Bhide, Prasad, & Ghosh, 2001). They summarise the significant reforms as below:

1. Statutory reserve requirements were lowered to 5 percent cash reserves and statutory liquidity ratios were brought down to 25 percent. This required banks to maintain lesser cash reserves, enabling them to lend this money and capture more markets.

2. The banks could decide their deposit and loan rates and thus gained an upper hand over PSBs. As private and foreign banks already were ahead in service delivery and product customization; they scored a win with the ability to charge their own interest rates.

3. Opening up the markets for Foreign banks and also for new private banks resulted in a sudden entry of competition for an already unprepared and slow responding PSB sector.

4. Micro – prudential measures like income recognition, accounting norms, asset classification, capital adequacy requirements, exposure norms and provisioning norms for loans were introduced giving a easy framework for banks to operate in.
5. State owned banks were given authorization to raise upto 49% of capital from the capital market. This diversified the ownership in PSBs bringing in a little amount of responsiveness in them as a result of this diversified ownership.
6. Transparency was promoted and ensured by mandating more amount of disclosure.
7. Banks were invited to provide suggestions on important policy formations and decisions were taken after all players in market were taken into consideration. This not only gave PSBs, private and foreign banks an equal say in the policy formulations but also gave banks to prepare in the response time available.

(Bhattacharya, Lovell, & Sahay, 1997) explore how liberalisation changed the entire scene of Indian commercial banking. The authors examine around 70 banks in the country to calculate their efficiency scores. Contrary to assumptions, they found that the PSBs scored more on efficiency closely followed by foreign banks leaving the last position to the Indian Private Banks. Although they also observed a temporal decline in the performance of the PSBs while a temporal increment was found in the foreign banks' performance.

Ultimately, (Bhattacharya, Lovell, & Sahay, 1997) find that in addition to the PSBs being the most efficient; foreign banks seemed to be catching up speed of surprising levels. It is indeed thought worthy that the foreign banks rose at such speeds in spite of lesser efficiency while PSBs started declining in spite of their high efficiency. This could have been because of the product innovation and service attitude that the foreign banks brought with them. Another reason could be the efficient handling of a small network of branches in metropolitan areas rather than penetrating into rural areas which worked in the favour of the foreign banks.

The authors reflect the results of (Bhattacharya, Lovell, & Sahay, 1997) to some extent wherein all the banks show an incremental growth in post reform era. Although the scheduled commercial banks have shown a decrease in growth after 2007 – 08 wherein after these years these banks have been on steady decline. This might be because scheduled commercial banks failed to catch up with the technological evolution which the other banks were quick to adapt to. A numerous reasons like rigidity of an aging staff, lax recruitment practices and non responsiveness to change could have taken scheduled commercial banks downwards.

(Zhao, Casu, & Ferrari, 2010) explored one more parameter to study post reform efficiency of the banks. They looked at the cost structure, ownership and competition. The authors find evidence that the reforms set into motion not only as cash flow in business but there were many effects on internal operations and competition too. Results of the study suggest technological upgradation as a part of adjustment to the reforms and the change in environment brought through by them.

(Zhao, Casu, & Ferrari, 2010) conclude that the input and output mix of the banks have been changing to match the regulatory environment. The rigid cost structure which had been inherited in pre reform era became a problem due to technology reforms which in itself were costly; but banks have started to adapt to flexible cost structures accommodating technologies. A notable and commendable detail of these adaptability of banks is that after 1997; no significant cost structure changes have been required and that the banks have made major adjustments to their process in line with policy measures.

(Zhao, Casu, & Ferrari, 2010) also find that the relationship between ownership and cost gets affected by banking reforms. In the time period of 1998 – 2004 the market has observed strong competition and thus also is related to the technological progress of that time.

(Mohan, 2005) also explores the impact of reforms on productivity and efficiency of Indian banks. The author studies economic reforms from the angle of the balance of payments crisis faced by the country in 1991. (Mohan, 2005) observes that the banking sector reforms were brought in to increase efficiency of resource allocation. This was to be done by achieving operational efficiency through various means. He also observes that India as a country has dealt with reforms in a different way than other countries.

(Rajan and Zingales, 1998) establish in their study that there is a positive relationship between growth in banking and financial development. (Demirgúc-Kunt and Maksimovic, 1998) also state that the firms with high rate of financial development are able to raise more funds and thus aid in speeding up development.
(Barbara Casua, Alessandra Ferrarib, Tianshu Zhaoc, 2011) study the impact of regulatory reforms on banks and their growth in the period of 1992 – 2009. Results depict that the productivity of banking has increased consistently and the catalyst has been technological advancements. Ownership patterns also change responses towards the operating environment. Foreign banks are found to be highly dominant in their product mix and technology prowess.
(Shanmugam & Das, 2004) measure the technical efficiency of banks in India during the period of 1992 – 1999. The results of the study show that the interest margins have increased without any relation with time while other outputs not related to interests and credits are proportionate to time.
(Sayuri, 2001) also observes similar results in his study of the banking sector. The author also finds that the reforms have had a positive impact on improving the performances of the banks. The results also show that the profitability and cost efficiency of PSBs got hampered due to regulations in the initial stage of the reforms. Cost efficiency rises '97 onwards and slowly PSBs are trying to catch up with the foreign and private banks. PSBs were later allowed to take up non-traditional business activities provided opportunities for profitability to PSBs along with other banks. Priority sector lending was found not to have negative effect on profitability and cost efficiency. The study suggests that ownership of banks matters when profitability and income efficiency are concerned.
(Gauba, 2012) also notes that the banking sector has grown at a CAGR of 23% and contributed atleast 6% of GDP. It also employed more than 7 million people and provided a total of 36.76% returns to its shareholders. The author also notes that the Indian banks survived financial sector crisis of 2008 and this has happened because of the strong futuristic reforms in the banking sector.
(Chaudhary & Sharma, 2011) analysed the difference in performance of in public sector and private sector banks. They note that increased competition, new information technologies, changing governmental regulations have brought in a huge competitive revolution in the banking sector. The authors also note that stringent measures have to be taken to reduce NPAs. The management information systems have to be strengthened and used to protect banks against NPAs. PSBs also have to pay attention to improvising functions to meet competition given by the private and foreign banks.
(Jayadev & Sensarma) observe that one of the ways that Indian banks used to survive the rapid competition were mergers. These mergers have been made mainly on basis of shareholders and managers.
(Landerman, 2000) too investigates the potential benefits of mergers, especially on economies of scale. He finds that banks specifically benefit from merging with non – banking financial firms and that merging with Insurance firms and securities brokerage gives additional protection against bankruptcy.
(Jayadev & Sensarma) put forth that in India, mergers of banks have resulted in improvement of operational performance and efficiency of the banks. The weaker banks are being merged with healthier banks so as to avoid bankruptcy later and even as a protection of the depositors money and interest.
Banking commissions of 1972 (R. G. Saraiya), 1976 (Manubhai Shah), 1978 (Committee for functioning of public sector banks, James S. Raj) have all attributed critical importance to system restructuring in Indian banking with an objective to increase efficiency of credit delivery and also to have a hierarchy of banks.
The Narasimhan committee of 1991 recommended the convergence and consolidatation of commercial banks so as to increase the size of these banks and bring them to a comparable level with banks all over the world. The second Narasimhan committee of 1998 further pointed to a possibility of merging banks with NBFCs and other financial institutions to explore the effects of synergy obtained through diversification.
The findings of (Jayadev & Sensarma) support the suggestions of various committees that the weaker banks should be merged with the larger banks to gain strength in international and national market.
(Raman, 2012) notes in his paper that 45% of the country's citizens were under poverty line and that hardly 31% of the people in India had access to banking services. As high as 80% people were away from the benefits of any kind of insurance thus creating a huge opportunity for the banking sector to tap the

untapped potential in the market. The competition might have risen due to the reforms but so did the available market. (Raman, 2012) further states that in 2012 there were 99 such major blocks in the country where banking did not exist at all; 86 being from the North Eastern part of the country. This pushed RBI to propose the concept of branchless banking through small shops, micro finance companies, business representatives etc. The author also recognizes the need to increase the number of products in the credit and insurance areas because that is most important need of people, especially in drought hit rural parts of the country. (Raman, 2012) finds the three main reasons for a low percentage of financial inclusion in the country as Access to financial market, access to credit markets and lack of financial literacy. He details the steps taken by the RBI to fulfil the objective of financial inclusion.

The major findings of (Raman, 2012) were that only 14% of people in the country had loan accounts. In rural areas 51.4% population had no access to any formal banking service while 73% had no access to a formal credit source. 80% of the population were without any access to any kind of insurance in the entire country and only a meagre 5.42% of Indian villages had bank branches. Banks have been directed by the government and RBI since 2005 to allow people to open banks at minimum and zero balance. Launch of Kisan Credit card gave a credit facility of up to 25000/- rupees to the farmers. In 2008, the announcement of the Financial Inclusion fund and Financial Inclusion technology fund provided some more support to the financial inclusion movement. Initiatives for financial literacy were put into motion which till date are working seamlessly to spread financial literacy. Schemes like Svavalamban and Swabhiman were also introduced resulting in opening of almost 50 crore accounts in banks till March, 2012.

(Ravichandran, et al., 2003) in his address at the colloquium mentioned how apart from norms, the changing nature of the Indian consumer has also affected the banking business. He also states that the banking sector has become a consumer driven market. Managerial competencies need attention to tackle new challenges like product mix, positioning, delivery channels, market segmentation etc. Risk management is also taking up a huge role and accessing and managing risks have become crucial to the survival and sustenance of banks. N. Ravichandran also mentioned that the audit function needs to be strengthened to prevent fire fighting and focusing on performance efficiency instead.

(Kaur, 2016) also studied new innovations in the Indian Banking Sector. The author notes that the services and products being offered by the banks define the extent of their development. The research paper finds that services like ATM, NEFT, RTGS, Internet and mobile banking, Cheque truncation and SMS banking are some innovations that completely changed the nature of business. The paper also looks at some new innovations which some non banking financial institutions and foreign banks.

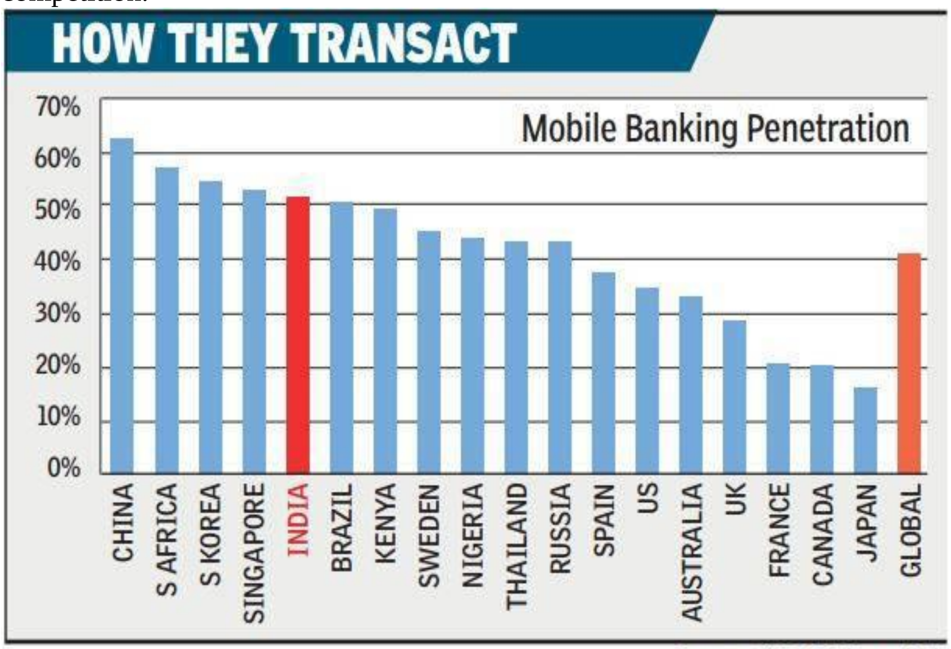
(Kaur, 2016) notes that banks like ICICI, AXIS and HDFC bank are the ones which have taken up innovative services and thus remain ahead in competition to serve a tech savvy customer. Technologies like bio metric identification to do away with the passwords, In car apps, Facial recognition to make payments, Smart watches, crypto currencies are all technologies adopted by the foreign banks but yet to be fully adopted in India. PSBs have not been able to troubleshoot the smooth operations of basic internet and mobile banking and seem to have a long way to go as far as the above mentioned technologies are concerned.

(Akilandeswari & Malliga, 2016) Evolution of technology in the banking sector has come at amazing speeds. Nationalization of banks brought great speed to technological advancements in the sector. These advancements have helped banks to scale their operations and improve the quality of their services too. The advent of modernized foreign banks to brought in a revolution even in the delivery channels of the banking sector.

(Akilandeswari & Malliga, 2016) make an attempt to study the evolution of technology along with its advantages, the challenges it brought to the industry and the upcoming trends.

As (Ayachit) observes the same in her research on ICT innovation in Indian Banking. She also elaborates on use of Artificial Intelligence and Robotics in banking by quoting examples of City Union Bank, ICICI, HDFC, Digi Bank and Yes Bank using chat bots and other AI technology for customer interaction and other operations. The paper also puts forth how voice recognition, face recognition, IRIS recognition and fingerprints are being used for authentication while block chain technology brings in bitcoins. ICICI bank was the first to take up India's first International trade transaction with block chain technology followed by Yes bank. Technology like Big data analytics is avidly used by HDFC, ICICI, Axis Bank, ING Vysya and SBI in different areas like customer interaction, to reduce credit losses, data modelling, etc. Although challenges of these technologies are also highlighted by (Ayachit) which are potential unemployment, security issues, digital literacy issues etc.

(Sikka & Srinath, 2017) also look at how these trends of innovation have changed the face of banking sector. The authors note that technological explosion has brought in an onslaught of customer expectations which is dominated by the need to be online 24 X 7 and a very small turnaround time for services. The new and urbane products are now delivered at a very low delivery cost and is supported by robust technology. This scenario prompts to bring in new products, services and above all new strategies for sustaining in the markets. Customer centric banks which introduce products and services which are not only innovative but also tailor made to suit customer needs will definitely emerge as winners in the fierce competition. The authors conclude that banks also need to leverage technology to step up their game in the competition.



Source: UBS Evidence Lab

(Sikka & Srinath, 2017) also cover the digital banking, mobile banking, artificial intelligence tools that are used by the banks. The paper also looks at the effective way of cashless transactions which have given customers numerous options like Unified Payment Services (UPI) and Bharat Interface for Money (BHIM). Application Programming Interface (API)s are also picking up speed and surprisingly rural India too is adapting very well to these technological changes. This has become possible because all

these interfaces are available in various languages spoken and read across the country.

As the figure shows, India ranks a close 5 in the amount of mobile penetration which is a little more than 50% and is greater than a lot of developed countries.

The paper also examines the main differences between payments bank and small finance banks which are latest trends in banking.

PAYMENTS BANK	SMALL FINANCE BANK
Can accept deposits, but only up to ₹1 lakh per individual customer	Allowed to take deposits of any amount
Can't lend in any form	Can lend but the focus will be on small lending
Can open small savings accounts	Can finance small business units, small and marginal farmers, micro and small industries and unorganised sector entities
Can provide remittance services	Can provide remittances as well as credit cards
Allowed to issue automated teller machine (ATM) or debit cards	Allowed to issue ATM or debit cards
Not allowed to issue credit cards	Has to ensure that 50% of loan portfolio constitutes advances of up to ₹25 lakh
Can distribute products such as mutual funds, insurance and third-party loans	Can distribute financial products such as mutual funds, insurance and pension

Source: RBI website

(Singh, Bansal, & Chabbra) compare performance of banks with respect to the innovative inputs coming into the banks. The study observes that there isn't a completely clear link between technology investment and performance of the bank although it can be concluded that technology contributes to the banks performance for sure. The study finds that if certain conditions like size and scale of business and trained manpower are fulfilled then technology along with other competencies contributes to increasing the performance of the banks. The researchers conclude that an ideal combination of technology and human resource strategies will result in great performances of banks.
(Saxena & Rishi, 2004) examine why India has been late in adopting these technological advancements. The article also emphasizes on the role of labour unions in the technological adaptation in PSBs.
Below table shows the computerization progression in banks from '98 and 2001.

	1998	*2001*
Total no. of branches	45,439	46,426
Partial computerisation at branch level	6,961	13,218
No. of fully computerised branches	3,668	9,777
No. of existing service branches	336	376
No. of partially computerised service branches	166	134
No. of fully computerised services branches	149	252
Total ATMs installed	194	895
Total credit cards issues	850,000	875,788
Total dedit cards issued	32,000	219,058

Source: Reserve Bank of India website (www.rbi.org.in).

The research finds that public and private banks cannot only rely on technology completely for achieving the desired efficiency levels and cutting costs at the same time. In fact, this realization has pushed PSBs towards voluntary retirement schemes to cut down their wage costs. It also drove PSBs to accept retail banking and other such services wherein fees could be charged along with commissions on derivative and gold loans which led to bringing in more revenues.

(Saxena & Rishi, 2004) also note that the PSBs need to become oriented commercially and work to improve profitability. This is necessary to fund the technological up gradation required by the PSBs. (Saxena & Rishi, 2004) also observe that the Government of India in 1991 has been blamed by the Narasimhan committee (1991) along with the Ministry of Finance for the condition of PSBs with reference to the directed lending programs. Moreover, the Narasimhan Committee also suggested that all guidelines and directions which had been given to PSBs for their autonomy be reviewed. After 2004, the PSBs were given freedom to upgrade their extension counters and close their unprofitable branches so as to free up more resources which could then be directed towards productive results.

(Malik, 2014) finds in her research that leveraging technology has indeed given a boost to banking infrastructure. The following table gives the numbers which support the statement.

Sr. No	Bank group	On-site ATMs	Off-site ATMs	Total number of ATMs
1	2	3	4	5
I	**Public sector banks**	40,241	29,411	69,652
	1.1 Nationalised banks	20,658	14,701	35,359
	1.2 SBI Group	18,708	13,883	32,591
II	**Private sector banks**	15,236	27,865	43,101
	2.1 Old private sector banks	4,054	3,512	7,566
	2.2 New private sector banks	11,182	24,353	35,535
III	**Foreign banks**	283	978	1,261
IV	**All SCBs (I+II+III)**	55,760	58,254	1,14,014

Source: Report on Trend & Progress of Banking 2010-11

The below table shows the volume and value of electronic transaction by Scheduled commercial banks between 2011 to 2013.

Type of Transaction	Volume		% change	Value		%change
2012-13	2011-12	2012-13	2012-13	2011- 12	2012-13	2012-13
ECS Credit	121.5	122.2	0.6	1,838	1,771	-3.6
ECS Debit	165	177	7.2	834	1,083	29.9
Credit cards	320	397	23.9	966	1,230	27.3
Debit cards	328	469	43.2	534	743	39.1
NEFT	226	394	74.3	17,904	29,022	62.1
RTGS	55	69	24.5	5,39,308	6,76,841	25.5

Source: Report on Trend & Progress of Banking 2012-13

Some similar observations are put forth by (Shet, 2016) wherein the author also puts in that these technological up gradations will also help in financial inclusion. The author finally also suggests that banks need to match their technological progress to needs of customers to ensure that they hit the target with technology.

(Kumar & Singh, 2017) highlight the struggle put up by the unions to resist the technology and forced the banks to re-evaluate the decision and their position on technology. The authors observed private banks responded quickly to the advancements in technology while PSBs were forced to come up with voluntary retirement schemes to trim costs. PSBs also had to adopt selling products to find ways to increase profitability and enhance e their operating expense ratio.

(Safeena, Date, Kammani, & Hundewale, 2012) also find that the ease of business and the utility brought about by the services like mobile banking and online banking in addition with the awareness of securing transactions has created a positive effect on the customers.

(Uppal & Bala, 2017) study the awareness and usage level of the e – banking services provided in semi urban areas of the Mansa district. They find that in 2017 the year 74.55% of customers are aware of the e-banking services but only 60% are using them. They also find that the middle income slab prefers e - banking the most while 14.55 % respondents don't use it because of a lack of knowledge. Survey also finds reasons like service charges on credit and debit cards, interest rates, lack of security and ATM machines out of cash as reasons for avoiding e – banking.

(Gupta, 2008) puts forth that Internet banking in India is still at a nascent stage and is dominated by the private and foreign banks. Although for India, the technology scene is pretty new; Indian scheduled banks will have to speed up their adaption which is a challenge with the costs and human resource talent problems.

(Rajput, 2015) appraises the perception of customers towards e-banking and finds that customers easily adapt to technologies like the ATM or using cards (credit or debit) for payments. But the percentage of people feeling that e-banking is secure for transactions is less than 50% which is same for people feeling that e-banking is easy, time saving and that it provides accurate information. The author concludes that there are only 45% people who have a positive perception towards e-banking inferring that there is still a huge scope for e – banking to spread to the untapped population of the country.

(Safeena, Date, & Kammani, 2011) study the adoption of internet technology in an emerging economy like India and the study finds that customers would like to use internet banking only if it is easy to use. Security and privacy are two other factors of critical importance to the customers. The results also point to the lack of awareness of customers and the banks need to educate their customers more about the correct usage of Internet banking. Banks also need to focus their efforts on formulating effective and strong strategies for security which will result in building confidence of the customers.

(Amutha, 2016) reports that there is an awareness about e-banking but there is a need to educate the customers related to services and security measures for e-banking.

(Tonape, 2015) in his doctoral thesis also finds that although the stages of technology have evolved in the Indian banking sector and a majority of customers have a positive perception towards e-banking services. What is required is awareness about how to use e-banking safely; which will probably take away the last barrier from customer's end in using it. Although comparison wise; the awareness related to ATM is more than online and mobile banking. This finding from (Tonape, 2015) again points to a lack of awareness not only about the products but also about the small barriers that customers experience while using technology in their banking transactions.

(Kaur, Subedi, Chaudhary, & Parajuli, 2016) too find that the utilization of e-banking services is not as desired and there indeed is potential to motivate customers towards increasing usage of e-banking. The researchers find that the awareness about e-banking and its services is as high as 87.2% but the utilization is around 70%. Customers seem to prefer services like online shopping, credit card usage for buying, SMS banking and ATM banking. The study also finds that around 64% of customers face barriers when they use e- banking and these sometimes turn them away from these services.

(Mathivanan & Kavitha.S, 2012) find in their study also reflect the same findings that services like online shopping, banking, ATM etc are used by the customers but the need of awareness for security measures of using e-banking does exist. Internet banking is preferred because it is easy to access and tele - banking seems to be a huge no – no for customers.

A similar study by (Krupa & Rajasekaran, 1991) finds awareness regarding e – banking services definitely exists but customers are demanding better quality of services from the bank. This includes awareness regarding the use of these services and a better support when actually using these services.

(Singhal & Padhmanabhan, 2008) state that utility, security, funds transfer and ticket booking/shopping are the main contributing factors for usage of e-banking services.

(Ahmad & Bansal, 2014) investigate if attitude varies amongst the e-banking services users based on some parameters. The results of their study show that attitude of the customers depend on differences in their degree of awareness about perceived – ease of use, usefulness, security, privacy and risk. These were the main factors that the authors find; perception towards which affects the attitudes formed by customers of e-banking.

(Satheeshkumar & Maliqjan, 2015) investigate the satisfaction level of customers towards e-banking services. They find that low penetration of services and their corresponding awareness leads to a difference in the satisfaction level of customers. Although generically satisfied, there is a variation in levels of satisfaction characterized by these reasons. The various fees being charged for these services seem to be causing a inconvenience to the customers while quality of the services seem to be satisfactory.

In a comparative study of how Public, Private and Foreign banks have adapted to e-banking, (Tandon, Goel, & Bishnoi, 2016) examine how these banks have coped with the rapidly changing scenarios.

The study finds that the level of awareness about e – banking of private and foreign banks was higher than the public sector banks. A service as common as asking for cheque book is being rarely used by customers of the PSBs; same goes for third party transfers and credit card usage. Also PSB customers also find e-banking inconvenient because of problems with technological interfaces, websites hanging frequently, slow working websites and lack of user friendly interface. These problems occur frequently for PSB customers while also happening sometimes for private banks customers but rarely for the foreign bank customers.

(Koti, 2016) finds that a good amount of customers say that factors like a quick response, a round the clock services, user friendly and convenient interfaces and freedom from waiting in queues. Also factors which turned customers away from e-banking were internet connectivity, low security and privacy, low levels of awareness etc. Public sector banks will have to gear up for the competition because the foreign and private banks are luring their customer with ease of business and secure transactions round the clock.

(Sikdar, Kumar, & Makkad, 2015) also point to trust, ease of use, constraints in usage and accessibility as the main parameters important to the customers to use e – banking. They find that trust and ease of use have a negative effect on the perception of the customers towards e – banking.

(Sidhu, 2013) also supports the above discussions through his study wherein the findings are speed, customer awareness and security matter to customers.

Considering India as a country has a major population living in the villages; it is essential to take these e – banking services to these villages.

(Khan & Mahapatra, 2009) also point at privacy/security and user friendliness are dimensions which the customers feel that many banks are failing to give them. Also, urban India might be responding better to e-banking but rural India needs lots of education and hand holding for them to start opening up to e – banking.

The major findings of (Rajanna, 2017) are that there are only 66% people who had a bank account wherein 74% people are living below the poverty line. 64% people were aware of e-banking but 61% had never used a service like RTGS or NEFT. The rural India still stands to be covered by e – banking and the challenge is educating a population which barely has basic education. 5Services can be provided in regional language but using these services need the customer to be educated too.

It now stands to be seen as to how banks – especially scheduled banks which are preferred in rural and semi urban areas manage to face the challenge of bringing their customers on the e – platform and give quality services securely to them.

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