Chapter 1

Introduction

Motivation and Background of the Study

Monetary system is the lifeline of any economy. It is the fuel for economic development. Similarly banking industry is the backbone of a sound monetary system. For the monetary system to function smoothly and add to economic growth a sound banking system is a must have. Hence the banking directly influences the process of economic growth and prevailing economic conditions. Like 2008 financial market crash in USA was due to default in big chunk of mortgage loans and not even in USA, it sent shock waves across the globe.

Banking has evolved a great deal over the years. In ancient times there was a barter system that ran the whole economy, owing to its limitations, the introduction of money as medium of exchange was the first step taken for the development of economic growth by ancient civilizations. Ever since then banking has kept developing to more and more sophisticated, structured, process oriented systems. With the establishment of modern day banking, the paper form of currency was shifted to stored value i.e. bank accounts. Further to that plastic money was introduced which is hugely in use these days in the form of credit and debit cards. There are so many types of such card products that banks introduced for their customers. After that banks introduced E-Money i.e. online banking. Despite the transformation and convergence of banking industry with technology, the banks are still not able to provide financial services to the vast segment of people in India.
Financial Inclusion

Financial Inclusion introduced in India on recommendations of Rangrajan Committee in the year 2004, as the delivering financial products, at bearable costs to disadvantaged and low-income strata. Various efforts to increase the score of financial inclusion have been initiated at national and international fronts. Aim of financial inclusion is to include unbanked population under the formal financial system to have the opportunity to avail financial services like savings, payments, transfers, credit and insurance (Hannig and Jansen, 2010). As said by World Bank the broad access to financial services in absence of price or non-price barriers is real financial inclusion. Khan, 2011, defined financial inclusion as the process of assured and timely access to adequate credit whenever needed by vulnerable strata of the society at an affordable cost and a bank account with all basic facilities like payments and insurance. Sharma & Kukereja, 2013, has been of view that for economic growth of a nation, weaker section of society has to be financially independent. As banking services are in the nature of public good, the prime objective of public policy should be to provide basic banking services to the public without discrimination. The financially excluded poor group of society use their own limited savings for expenses like education and to start their own business in order to take advantage of various growth opportunities which results in further inequality of income hence slower economic growth. Uma et al. 2013, has observed that, the financial inclusion leads to economic growth by improving the living standards of the deprived and poor people of the country. For the real economic growth of an economy the economic as well as social growth of poor strata of the society through outreach of basic financial services vis-à-vis savings, payments or transfers, insurance and credit, is must. Therefore to achieve the all-inclusive growth, a nation must include the disadvantaged or deprived or poor or low income groups of the society into its financial system. Further Singh, Venkataramani and Ambarkhane clarify that these deprived sections of society, even if deprived of basic financial
services to be provided by the formal financial system, has been using these basic financial services through informal sources, but at comparatively higher costs and risks (Collins et al, 2009). This makes them vulnerable to the economic shocks, resulting into equality of income and this further leads to vicious circle of poverty. In simple words of Leeladhar, 2005, financial inclusion is about taking the banking services to the common man and banks should take it as both corporate responsibility as well as business opportunity to design their corporate strategies accordingly.

**Financial Inclusion in India**

As per Census 2011, 58.7% households are availing banking services in India and there are 1,02,343 branches of Scheduled Commercial Banks (SCBs). The all-India CRISIL Inclusix score is 40.1. It is a reflection of under-penetration of formal banking facilities in most parts of the country. The bottom 50 scoring districts have just 2 per cent of the country's bank branches. To extend the reach of banking to those outside the formal banking system, Government of India (GOI) and Reserve Bank of India (RBI) are taking various initiatives from time to time like liberalized branch opening for under banked and other districts and compulsion of having at least one account of each household in the bank in service area, Business Correspondent Model, Swabhimaan Campaign, setting up of Ultra Small Branches (USBs), banking Facilities in unbanked blocks, expansion of ATM network etc. Even No frill accounts, PM Jan Dhan Yojna, PM Jan Jeevan Bima Yojna, PM Suraksha Beema Yojna, Mudra, LPG Subisidy PAHAL, Direct Benefit transfer, have been initiated with lots of enthusiasm. The results of the efforts of the GOI and RBI has been really appreciable, according to data released under Census 2001 and Census 2011 on number of households availing banking services depicted below.
Table 1

**Number of Households Availing Banking Services**

<table>
<thead>
<tr>
<th>Households</th>
<th>As per Census 2001</th>
<th>As per Census 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Availing Banking Services</td>
</tr>
<tr>
<td>Rural</td>
<td>13,82,71,559</td>
<td>4,16,39,949</td>
</tr>
<tr>
<td>Urban</td>
<td>5,36,92,376</td>
<td>2,65,90,693</td>
</tr>
<tr>
<td>Total</td>
<td>19,19,63,935</td>
<td>6,82,30,642</td>
</tr>
</tbody>
</table>

*Source: Census 2001 and 2011*

Even the CRISIL Inclusix score at an all-India level had improved to 42.8 in 2012 from 40.1 in 2011. The CRISIL Inclusix score has a relative scale of 0 to 100 representing nil to ideal position of a state based on three critical parameters of branch penetration, credit penetration and deposit penetration as basic financial services. Based on these three parameters the trend of CRISIL Inclusix score for financial inclusion in India during 2009 to 2013 has been shown in the figure below.
No doubt the efforts contributed a lot towards the financial inclusion of financially excluded people in India but still there is substantial part of India not having access the formal financial system and even mere opening of saving or no frill accounts without providing basic insurance as well as credit facilities is called partial financial inclusion but not the financial inclusion. Majority of the no-frills accounts opened under the BC (Branch Correspondent) model are not operational. Opening savings accounts profitably, have not made the desired movement. This has made BC model unviable for the banks to consider this framework further (Kolloju, N., 2014). Mere no-frill accounts does meet the purpose of financial inclusion but formal financial institutions has to achieve the faith and benevolence of the deprived through developing sturdy linkages with community-based joint financial ventures and cooperatives (Sharma & Kukereja, 2013). The effect of various financial inclusion efforts, no doubt, has been significant but not sufficient as the figures released by RBI and CRISIL on improvement of financial inclusion depicts. Due to ever increasing concern of Prime Minister of India over financial inclusion, he stated, the success of all schemes largely lies in a key concept of JAM, the trio of Jan Dhan Account, Adhar Card and
Mobile Phone. The basic financial services could be availed through Jan Dhan account linked with Adhaar and mobile number registered with Adhaar card has been a key to success of financial inclusion. Both account and Adhaar must be linked to same Mobile number. As such Mobile technology revolution will contribute greatly to financially include the largely unbanked strata of Indian society. So in the next section the author discussed the mobile technology revolution and its real picture in Indian context.

Mobile/Cell phone Technology Revolution

As they say the only thing constant in life is change and thus life is ever changing and how. We live in such a globalized, close nit informative world that communication is even faster than wind. Mobile communication has been one of the most significant transitions the human race has gone through or still going. It has changed the way we thought of everything and anything under the sun. From fulfilling our very basic need of communicating over a wireless network through voice calls, the mobile phone revolution has gone way beyond mere voice calling. We depend on our mobile phones for simple tasks like keeping record of time, use mobile banking to most sophisticated tasks like GPS and payments and other banking needs. In the last few years, mobiles have become an integral part of our lives and this smart phone phenomenon has taken its grip on every sphere of our lives. All the sectors have used these smart phone mobile applications in their own ways to take advantage, to generate business and creating a unique network of distribution of products and reaching customers. We can order a Pizza from the comfort of our car while coming back home from office.

As per TRAI as on 30th June 2015, there has been 980.80 million wireless connections in the country, out of which 300.22 million (30.6%) has been mobile internet users. This revolution has specifically been radical for service sector in general and financial sector in particular. The banking sector is no exception to this with the sizeable portion of households (41.3%) not having a bank account but having access to wireless connections
Role of Mobile Banking for Increased Financial Inclusion in India

It is going to be the future of Banking. Banking has come a long way over the years. From those long quos for cash deposits and withdrawals, lot of rush has been diverted to ATMs and internet banking now a days. You rarely see someone at a bank branch for the purpose of cash withdrawal itself. But it is an ever evolving system. The growth of banking lays in the fact that how many more and more people it includes in its portfolio as the economy grows. During the last decade mobile technology revolution has changed the style of living and poor strata is not an exception to it. The technology is affordable, cost effective and easy source to link everyone to the formal financial sector. (Sultana, R., 2009). The technology specifically is going to play a big role in bringing this theory into practicality. Henceforth the smart phones technology is the most conducive technology that the banking needs. As all other sectors mobiles are going to be the next big thing in banking. The use of mobile technology for providing financial services benefit whole society to avail banking services, banks through low operating costs and generate income for Telco companies (Dash & Tech, 2014). The enhancement of mobile technologies and devices, enable the conduct of banking services at convenient place and time (Gu, Lee & Suh, 2009). It might be internet based (bank apps) or even at times non internet based (USSD, SMS) models. Almost all big developed and developing economies have seen a massive growth in population size having access to mobile phones. Vis-à-vis the banking system has also evolved; hence the use of mobile banking in both these is going to serve a lot of purpose.

Mobile/Cell Phone or wireless subscription in India

According to the press release on highlights of telecom subscription data by TRAI, there is tremendous growth in wireless subscription in 2016, when compared to fiscal year 2011. There have been 811.59 million mobile connections or wireless subscribers in India at the end of fiscal year 2011 and now the subscription has crossed 1033.63 million at the end of fiscal year 2016. As given in TRAI press release the wireless segment include GSM (Global system for Mobile communication),
CDMA (Code Division Multiple Access) and FWP radio systems used in cell phones or mobile phones.

Table 2 and Figure 2 depicted below have indicated the trends of wireless connections in India since 2012. As mentioned in Table 2 and Figure 2, there is 30% increase in subscribers from 864.72 million in 2012 to 1127.37 million in 2016.

Table 2

**Number of Mobile Connection Subscribers (Millions)**

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Mobile Connection Subscribers (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>864.72</td>
</tr>
<tr>
<td>2013</td>
<td>886.30</td>
</tr>
<tr>
<td>2014</td>
<td>943.97</td>
</tr>
<tr>
<td>2015</td>
<td>1010.89</td>
</tr>
<tr>
<td>2016</td>
<td>1127.37</td>
</tr>
</tbody>
</table>

In the previous sections, the author through light on scenario of financial inclusion and mobile technology revolution in India, to draw readers’ attention towards the big gap between the financially excluded and mobile users strata of Indian society. Thus mobile banking as alternate delivery channel for providing access of basic financial services to ever increasing mobile users has been suggested and discussed by the author in the next section.

**Mobile Banking**

In the history of banking, anytime anywhere banking changed the face of banking. To avail the banking services at the comfort of your home anytime was made possible through internet banking also known as online banking. But it’s uncomfortable to carry a laptop or a desktop computer everywhere all the times as to carry a mobile phone. This fact opened the doors to new opportunities not only for banking industry but for all other service industries throughout the world. We may call it mobile technology revolution. The use of mobile phones for availing many services like buying a movie ticket, railway ticket, appointments,
hotel booking, banking, grocery etc. has been started long ago before mobile technology revolution, but through websites. Opening web pages on mobile devices with small screen was again not comfortable for the users. The information needed was not available on one screen, scrolling up and down, left and right makes it uncomfortable to use mobile devices for online services. The introduction of ‘Mobile Apps’ revolutionized the way to conduct the business totally throughout the world for all service industries.

**Scope of Mobile Banking**

Particularly for availing banking services on mobile phones there are three ways to do it i.e. webpage (internet), mobile apps (internet) and USSD codes (non internet). Using webpage to conduct banking is called online or internet banking. Thus ‘using Mobile apps on your mobile phones with internet access and using USSD codes on your mobile phones with or without internet access, for availing banking services is called mobile banking’. Banks may take advantage of mammoth penetration of mobile devices to reach the people in remote places where there is limited internet access (Cruz et al., 2010, Dasgupta et al., 2011).

**Pros and Cons of Mobile Banking**

**Pros of Mobile Banking**

- Mobile banking services can be availed anytime round the clock 24*7
- Mobile banking is easy and simple as it uses graphic user interface
- Mobile banking services can be availed using USSD codes or mobile applications
- Mobile Banking is available on all type of phones i.e. with or without internet and even on a keypad phone or smart phone.
- Mobile banking save both the time and money of the users as they need not to visit the bank and waste time standing in long queues.
• Paying all utility bills on or before time, always update about transactions in bank account, managing cheque book and ATM conveniently, transferring funds is always in the palm of the users of mobile banking.

• The use of OTP (One Time Password) justifies the security issues of mobile banking and many lock systems on the mobile phone saves users against the theft of mobile.

• Last but not least mobile banking saves paper so saves trees. This benefits our environment to flourish. Thus mobile banking contributes not only to economic growth but also the social growth.

**Cons of Mobile Banking**

• The hackers and viruses are biggest threat to the security of new technology and same in case of mobile banking.

• It influences the social bonding between the bank staff and the customers. So those who develop trust out of social contacts will never be able to trust mobile banking.

• USSD codes are surly available for mobile banking but not all the banking services, as available through mobile apps, are available to the users. Even in case of USSD codes one need to learn number of USSD codes.

• Operating system of the mobile device is another problem like when your bank’s mobile apps are not available on the windows phone, which you own, but the android phone or Apple or Blackberry. Now either the customer will not use mobile banking or need to buy a new phone for using mobile banking. Thus there is not any standard mobile app for all mobile platforms due to software limitation.
• Last but not the least in today’s world of technology revolution, the new technology can be changed or updated vary easily and even quickly. But it makes the users uncomfortable to grab the changes or updates as it needs both time to understand and money to buy new software or device.

The use of mobile phones for banking needs to increase the financial inclusion score, necessitated the promotion of mobile banking, but before talking about promotion we must have a look at the trends of mobile banking in India in the next section.

**Trend of Mobile Banking in India**

In recent years, the mobile banking has been reflecting a growing trend (albeit the low volumes) with the volume and value increasing by 108.5% (53.30 million in 2012-13 vis-à-vis 25.56 million in 2011-12) and 228.9% (Rs.59.90 billion in 2012-13 vis-à-vis Rs.18.21 billion in 2011-12) respectively. The trend in usage of mobile banking since 2010 is given below.

**Table 3**

*Trends of Mobile Banking Usage*

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Users (Million)</th>
<th>Volume (Million)</th>
<th>Value (Billion Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-11</td>
<td>5.96</td>
<td>6.85</td>
<td>6.14</td>
</tr>
<tr>
<td>2011-12</td>
<td>12.96</td>
<td>25.56</td>
<td>18.21</td>
</tr>
<tr>
<td></td>
<td>(117.45%)</td>
<td>(273.13%)</td>
<td>(196.58%)</td>
</tr>
<tr>
<td>2012-13</td>
<td>22.51</td>
<td>53.50</td>
<td>59.90</td>
</tr>
<tr>
<td></td>
<td>(73.69%)</td>
<td>(108.53%)</td>
<td>(228.94%)</td>
</tr>
</tbody>
</table>

*Source: RBI-Technical Committee Report on Mobile Banking, 2014*
As discussed above, the increasing number of wireless connections and relative low score of financial inclusion in India attracting the attention towards that segment of potential mobile banking users who are having mobiles but not mobile banking. As mobile banking can also cover those nooks of the country as were not covered by the manual or branch banking. Even the exhaustive range of financial services available through mobile banking will also convert major portion of partially included population to financially include. RBI data reveals the tremendous increase in value and volume of mobile banking transactions during the last half-decade in India. The table and corresponding figure below has been depicting the trends of mobile banking transactions in India since 2012.

Table 4

Trends of Mobile Banking Transactions Since 2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume of Mobile Banking Transactions (Million)</th>
<th>Value of Mobile Banking Transactions (Billion Rupees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>5.22</td>
<td>5.98</td>
</tr>
<tr>
<td>2013</td>
<td>8.89</td>
<td>22.61</td>
</tr>
<tr>
<td>2014</td>
<td>16.78</td>
<td>113.23</td>
</tr>
<tr>
<td>2015</td>
<td>39.49</td>
<td>490.29</td>
</tr>
<tr>
<td>2016</td>
<td>110.64</td>
<td>1498.18</td>
</tr>
</tbody>
</table>

Source: RBI statistics on Mobile Banking Transactions
Figure 3

*Trends of Mobile Banking Transactions Since 2012*

![Graph showing trends of mobile banking transactions from 2012 to 2016.]

*Source: RBI statistics on Mobile Banking Transactions*

Matching both the dimensions of the discussion namely need of mobile banking and increasing number of mobile users in India necessitated the research work in the field of mobile banking.

**Significance of Study**

Summarizing the above discussion, with the population base of 1210 million including 67% wireless subscribers (mobile connections) base (811.59 million, TRAI, March 2011) and 41% financially excluded households in country, the Indian banking industry has opportunity to target that portion of the country which has access to mobiles network but not to the formal banking services. Relating the figures of census 2011 and TRAI the Indian banking Industry must target that segment of potential customers who have no saving bank account but a mobile connection in hand. As per the figure given below the target segment thus covers the 8% to 41% of the population.
Role of Mobile Banking for Increased Financial Inclusion in India

Figure 4

Relation in Financial Inclusion and Mobile Subscription

(Explanation of figure) looking at the extreme sides, if we assume that all 33% mobile non users are banked, means remaining 26% (59-33) banked has been mobile users, suggesting 41% (67-26) mobile users as unbanked. Likewise if we assume all 59% banked are mobile users, it suggests that remaining 8% (67-59) mobile users has been unbanked. Thus according to the figures the 8% to 41% population in India has been using mobiles but not banked.

Comparing financial inclusion efforts worldwide, Arya et al., 2015, has studied initiation of financial inclusion in countries of Bangladesh, California, Dubai, Brazil, Canada, India, Indonesia, Kenya, Mexico, Peru, Philippines, South Africa, United Kingdom and United States and concluded that the developing countries try so hard to improve their
financial inclusion position, but still they have not matched the developed countries. Kunt and Klapper, 2012, based on Global Findex of 148 economies has analyzed that worldwide only 50 percent adults use services of formal financial institutions to open an account and that’s too vary regionally. Number of BSBDA as on March, 2017 stood at 533.2 Million, comparing to United Nations Organization estimates of revised population of India in 2017 i.e. 1,339.2 Million, only about 40% of population has been touched to open basic account. Even comparing this figure of March 2017 to Census 2011 population of India i.e. 1,210.2 Million, it has been still 44%. The achievements of financial inclusion efforts have been appreciable during the time span of seven years from 2010 to 2017, but not satisfactory in comparison to the population of India. The main objective of all inclusive growth of all the strata’s of the Indian society lapse somewhere.

In India mobile technology has a vast prospective as there has been 873.44 million mobile users at the end of second quarter, 2013 including 143 million using Internet on their phones. The scene have ever changed since 2011, the country’s mobile subscriber base have increased to 980.80 million in June 2015. Even the number of mobile internet user has reached 300.22 million. The developments in mobile phone density in the country, prospects an opportunity to weight the mobile proposal for the objectives and challenges of financial inclusion. Both banked and unbanked segments can be benefitted through mobile technology for E-banking services as per RBI committee report.

In nutshell the CRISIL Inclusix score of 40.1 and Census 2011 figure of only 58.7% financial inclusion has been thus the issue of national concern. On the other side if we look at the data reported by TRAI as on 30th June 2015, there has been 980.80 million wireless connections in the country, out of which 300.22 (30.6%) million wireless connections has been using mobile internet. This revolution has specifically been radical for Indian banking industry. The banking sector is no exception to this with the sizeable portion of households
(41.3%) not having a bank account and having access to wireless connections (mobile phones). Hence it can be said that the use of mobile technology as driving force to financial inclusion going to be the future of banking industry. Thus with 30% increase in wireless/mobile subscribers since 2012, (TRAI Press release No. 08/2013; 09/2014; 11/2015; 15/2016; 12/2017), India have clear opportunity to improve its financial inclusion score by harnessing the advantages of mobile banking.

The number of mobile banking users increased from 5.96 million in 2010-11 to 22.51 million in 2012-13. No doubt the number of mobile banking users increased manifold since 2010, but comparing this figure to the population of census 2011 (1210 million), only about 2% of Indian Population has been using mobile banking, whereas 67% population has mobile connections (811.59 million, TRAI, March 2011). The gap of 65% is not just a figure but matter of real concern especially when a country like India wants to use mobile banking as tool to reach financially excluded strata of the society. The great efforts are required to reach the 1210 million population of the country through mobile banking to achieve the target of full financial inclusion, at the same time efforts should be in right direction too.

India is passing through paradigm shift in the development and growth of financial services in every nook and corner of the country. The Reserve Bank of India (RBI) as well as Government of India (GOI) from time to time initiated various schemes and programmes like liberalized branch opening for under banked and other districts and compulsion of having at least one account of each household in the bank in service area, Business Correspondent Model (Souza & Devaraja, 2016), Swabhimaan Campaign, setting up of Ultra Small Branches (USBs), banking facilities in unbanked Blocks, expansion of ATM network, No frill accounts (Ranganath and Rao, 2013, Kolloju, 2014), Simplified branch authorization, PM Jan Dhan Yojna, PM Jan Jeevan Bima Yojna, PM Suraksha Beema Yojna, PM Mudra Yojna (Mishra, 2016), LPG Subsidy PAHAL, Direct Benefit transfer, (Sharma and Kukreja,
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2014, Apurva & Chauhan, 2013), Self Help Groups (SHG) (Venkataramany and Bhasin, 2009, Cnaan, 2012), Micro Finance Institutions (MFI) (Bhanot et al., 2012), additional efforts, Financial Inclusion Fund (FIF), Financial Literacy, Uniform Progress throughout India (Gupta, 2014) have been initiated with lots of enthusiasm. These efforts have opened the doors for banks to get maximum advantage by introducing alternate delivery channels for banking services and mobile banking is the first priority of the banks among available alternative channels. But India is still not able to achieve full financial inclusion, due to lack of proper policy making for introduction of mobile banking.

Before introducing mobile banking the government of India, RBI, Financial Institutions, Indian Banking Industry and other stakeholders must understand, why India lack behind in adoption of mobile banking. This necessitated the need to understand the behaviour. The behaviour has two dimensions towards new technology adoption—Positive and negative. In context of mobile banking the negative dimension raise the question – What resist the non-user from using the mobile banking for the first time (trial) and/or from continued use of mobile banking. Whereas positive dimension raise the question – what actually induce the adopter to use the mobile banking on continued basis in future. Hence the need of the hour is to first understand the mobile banking adoption and resistance behaviour. Accordingly the importance of study is to identify the factors resisting and inducing the adoption of mobile banking, in order to promote financial inclusion in India.

The chapter introduced the research with the general issue of financial inclusion and its probable solution mobile banking. To enable the researcher to specify the research objective in particular, the next chapter discuss in detail the review of literature on financial inclusion, mobile banking and related fields.