Chapter-4

ICT based Services and Performance of Banking Sector in India
Chapter-4

ICT Based Services and Performance of the Banking Sector in India

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ICT based Services in Banking Sector in India

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ICT based Services in Banking Sector in India

4.1 Introduction

A single click on the mouse and a single press on the keypad can shower money or can show Bank account statement. Customers with these E-Banking services can speed up their transaction. Therefore, there is no need to stand in long queue, hold cash and passbook in hands, fill application manually and wait for simple transaction for hours together.

Today, technology is transforming the lives of people. Day to day transactions has become digitalised. Companies are also exhibiting their digital capabilities by delivering innovative products and services. Computers, mobile phones and internet connection have become integrated parts of life. The Socio economic life of Indians has been sunk with latest technology. The present Chapter has been divided into two sections. A section deals with the trends in parameters selected for the study and the section i.e. shows the impact of ICT on the performance, productivity and profitability of both Commercial Banks and UCBs in India.

4.2 Telecommunications and Technology Growth in India

Telecommunication is considered as one of the important blood vessels of any economy. Developments in the field of Telecommunications have a pivotal role in bringing recognizable change in social, economic, commercial and cultural life of the citizens of any country. The development of telecommunication infrastructure is also interlinked with the development of the banking sector. Positive results in Online Banking, mobile Banking, etc. can be possible only with the best coverage of telecommunication networking.

Telephone Subscribers in India

Tele density in India is increasing. Communication and technology revolution has reached the remotest areas of India. It is clearly noted that that in India Banking payments through mobile phones would touch 350 billion dollars by 2020. One out of two people owns a mobile phone and television too. The total Tele – density has reached 74.9 percent
and 5.6 lakh villages have been given village public telephones and have covered 95 percent of the villages. In rural area 364.01 million phone holders and 6.06 million landline subscribers. It is ironically said that in India people have mobile phones more than toilets in their houses.

Table no- 4.1 Wire line and Wireless Subscription in India (in millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Wire line Subscribers in Million</th>
<th>Wireless Subscribers in Million</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-09</td>
<td>39.41</td>
<td>261.08</td>
</tr>
<tr>
<td>2009-10</td>
<td>37.97</td>
<td>391.76</td>
</tr>
<tr>
<td>2010-11</td>
<td>36.96</td>
<td>584.32</td>
</tr>
<tr>
<td>2011-12</td>
<td>34.73</td>
<td>811.60</td>
</tr>
<tr>
<td>2012-13</td>
<td>32.69</td>
<td>893.86</td>
</tr>
</tbody>
</table>

(Source Telecom Regulatory Authority of India)

Graph no -4.1 Wire line and Wireless Subscription in India (in millions)

In the above figure it is shown that wireless subscribers are increasing year by year. In the year 2008 there were 261.08 million wireless phone users and 39.41 million wire line subscribers. Then it increased to 584.32 million wireless subscription, in 2010 and in 2011 752 million people subscribed mobile phones. In 2012 the number of wireless phone holders increased to 893.86 million in India. But wire line subscription has been slightly decreasing from year to year. Wire line subscription was 39.41 million in 2008-09 but it further decreased to 37.97 million in the year 2009-10. As compared to the
growth of wireless phone connections, wire line connections are not promising. In the year 2012-13 wire line subscription has declined to 32.69 million. It is quite natural that wireless phones are more comfortable, convenient and cheaper than wire line phones therefore demand for wireless connections have been increasing and people prefer more wireless connections than wire line connections. Especially private players in the telecom sector are offering mobile sets for cheaper rates. Private companies such as Airtel, idea, Aircel, reliance and others have 87.78 percent of the wireless market share in the country. Today, even smart phones are not a luxury for a layman.

Table-No- 4.2 Broadband Subscribers in India

<table>
<thead>
<tr>
<th>Year</th>
<th>Broadband Subscribers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-09</td>
<td>6.22</td>
</tr>
<tr>
<td>2009-10</td>
<td>8.77</td>
</tr>
<tr>
<td>2010-11</td>
<td>11.87</td>
</tr>
<tr>
<td>2011-12</td>
<td>13.79</td>
</tr>
<tr>
<td>2012-13</td>
<td>14.98</td>
</tr>
</tbody>
</table>

(Source: Telecom Regulatory Authority of India)

Diagram-no- 4.1 Broadband Subscribers in India

In the above diagram, it is revealed that demand for broadband subscription is increasing. There were 6.22 Million broadband subscribers in India in the year 2008-09. Broadband segment consists of internet connections through wire lines, internet
connections on personal mobiles, internet by using Wi-Fi and other wireless segments. In the year 2012-13 broadband connections have increased to 14.98 million. Introduction of Newer Access technologies like BWA and 3G has attracted people to go for broadband connections. In this background the broadband subscribers grew from 6.22 million in 2008-09 to 14.98 million in 2012-13.

**Table-no- 4.3 Smart Phone users in India**

<table>
<thead>
<tr>
<th>Year</th>
<th>Subscribers In Million</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-09</td>
<td>0.8</td>
</tr>
<tr>
<td>2009-10</td>
<td>4.5</td>
</tr>
<tr>
<td>2010-11</td>
<td>10</td>
</tr>
<tr>
<td>2011-12</td>
<td>18</td>
</tr>
<tr>
<td>2011-12</td>
<td>29</td>
</tr>
</tbody>
</table>

(Source: Nielsen, IDC, NTT Docomo, AVENDUS Estimates)

**Diagram-no- 4.2 Smart Phone users in India**

The growing number of smart phones in the hands of people shows positive trends in the telecommunications field in the year 2008. 0.8 million Indians had smart phones. There is an increasing trend in the coming years. In 2012 29 million people were using smart phones with higher end applications. Usually who purchase smart phones go for 2G or 3G internet connections to utilize best applications by spending between Rs 100 and Rs 500 monthly. It is noted that the Indian population has more mobile phone connection
than the number of accounts in Banks. People prefer to use smart phones because they can easily get connected to social networking sites, WhatsApp and other apps, multimedia, games, and Internet browsing through Windows, BlackBerry, and iOS operating systems. Now a day the price of smart phone range from 3000-1,00000. The price of smart phones has come down. This price drop has attracted more and more customers in India.

**Mobile Bank Customers in India**

The mobile internet has become an essential part in day to day life of people. As of 31st January 2013, there were 22.51 million mobile internet users in India but it was 5.96 million in 2010-11. The table is showing a rapid growth of mobile phone users in India. Both smart phones and other mobile phone holders have an internet connection. Therefore the Banking sector is taking an advantage to bring under Banked and unbanked to Banking platform.

**Table-no- 4.4 Mobile Bank Customers in India (In millions)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of mobile Bank users</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010 - 11</td>
<td>5.96</td>
</tr>
<tr>
<td>2011 - 12</td>
<td>12.96</td>
</tr>
<tr>
<td>2012 - 13</td>
<td>22.51</td>
</tr>
</tbody>
</table>

(Source: Telecom Regulatory Authority of India)

**Diagram -no- 4.3 Mobile Bank Customers in India (In millions)**
As of 30.06.2013 there were 873.4 million mobile subscribers. Among them, 22.51 million people are using mobile Banking service. In the year 2010 – 11 there were only 5.96 million mobile Banking customers. The number increased to 12.96 million in 2011 – 12. Now it is 22.51 million mobile Banking users in India. Nearly 182 Million Bank account holders are utilizing ICT based services in this country.

Banks are heading towards less paper cost advantage concept. For this they have become competitive to reap the benefits of passing through to customers with advanced technological skills.

**Internet users in India**

Internet Banking has attracted the attention of customers of Banks since the late 2000. With the significant growth in electronic Banking concept, internet Banking is playing a major role in increasing customer satisfaction. Customers anywhere with an internet connection can do Banking transaction.

**Table-No- 4.5 Internet Subscribers in India**

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Subscribers In Million</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-08</td>
<td>12.9</td>
</tr>
<tr>
<td>2008-09</td>
<td>15.2</td>
</tr>
<tr>
<td>2009-10</td>
<td>18.7</td>
</tr>
<tr>
<td>2010-11</td>
<td>22.4</td>
</tr>
<tr>
<td>2011-12</td>
<td>25.3</td>
</tr>
</tbody>
</table>

(Source: Telecom Regulatory Authority of India)
Diagram -No- 4.4 Internet Subscribers in India

In the year 2008, 12.9 million had internet access in India. There was an increasing trend in having internet connection at their home or on mobile phones. In 2009 it increased to 15.2 million. In 2011 11 million households had a broadband connection and 11.4 million mobile phone users had internet connection. In the year 2012 internet subscribers increased to 25.3 million.

Information provided by VP-Sales & Operations at Google India said that India has the biggest Internet market in terms of users in the world and occupies the third place. 40 million people use the Internet from work place and 30 million from Cafes, another 11 million people have a broadband connection in their houses and at present 11.4 million access it through their mobile phone devices in India in 2011. Use of the Internet for Banking has proved a rapid rise in the financial year 2010-11. The total number of Bank customers who access net for banking transaction is close to 7% of the total Bank account holders.

4.3 Trends in E- Payments and E- Banking Services in India

The electronic payment system in India accounts 90 percent of the total value of the transaction in Banks. The RBI has introduced ECS, NEFT, RTGS, POS and MICR etc. to ease and speed up the transactions and has helped customers to go for quick transactions.
The electronic payments of Banks in India plotted on the graph in order to trace the movements. The following graph presents the trends in terms of electronic payments in India.

**Graph 4.2 Trends in Electronic Payment of Banks in India (rupees in Crore)**

![Graph 4.2 Trends in Electronic Payment of Banks in India (rupees in Crore)](image)

Source: *(Report on Trend and Progress of Banking in India 2012-13)*

The above graph clearly presents the trends in E-Payments in India. It has been found from the graph that E-Payments have shown increasing trend and it is quite high during the period of ICT penetration.

The total E-payments made in Banks in India were around 3, 05,382 billion in 2007-08. It gradually increased to 3, 29,736 billion in 2008-09. Then it increased to 5, 16,332 in the financial year 2011-12. Paperless transaction is gaining momentum now a days. The Indian Banking sector has taken a leap frog over from paper-based transactions to electronic payment system which includes Real Time Gross Settlement (RTGS), National Electronic Fund Transfer (NEFT) and Point on Sale (POS).

With the developments in technology both banks and customers prefer paperless transaction. It makes immediate transactions. Therefore, above figure shows an increasing trend in E-payments. According to the sources of RBI only 9 percent of funds are transferred through paper based transfers remaining 91 percent is done through electronic systems. Paper based transactions are mostly being made in Cooperative Banks.
Trends in RTGS of Banks in India:

The RTGS of Banks in India is plotted on the graph in order to trace the movements. The following graph presents the trends in terms of RTGS in India.

Graph 4.3 Trends in RTGS of Banks in India (rupees in Crore)

Source: (Report On Trend And Progress Of Banking In India 2012-13)

The above graph clearly presents the trends in RTGS in India. It has been found from the graph that RTGS has shown an increasing trend and it is quite high during the period of ICT penetration. RBI has introduced RTGS in 2004 and this facility has been extended to 77,093 branches in India. Banks with RTGS method have settled 55.1 million transactions, in 2011 – 12 as compared to 33.2 million in 2009 – 10. RBI has prescribed Banks to go for a RTGS payment network to make their transactions easier and convenient. Therefore Banks are using this payment system. To make this payment system more popular RBI has advised all Banks to adopt the Core Banking Solution. This CBS system has enabled Banks to have an Indian Financial System Code. IFCS is an eleven digit code with this RTGS and NEFT systems are used for payments. Therefore graph shows an increasing trend in RTGS payments because though RTGS is meant for larger value of transactions it quicker than NEFT.

Trends in NEFT of Banks in India:

The NEFT of Banks in India is plotted on the graph in order to trace the movements. The following graph presents the trends in terms of NEFT in India.
Graph 4.4 Trends in NEFT of Banks in India (rupees in Crore)

Source: (Report On Trend And Progress Of Banking In India 2012-13)

The above graph clearly presents the trends in NEFT in India. It has been found from the graph that NEFT have shown increasing trend and it is quite high during the period of ICT penetration. Indian Banks have made 226.1 million of electronic fund transfers in the year 2011 – 12. NEFT based clearing has grown from 66.3 million in 2009 – 10 to 226.1 million in 2011 – 12. NEFT has become popular because of its time saving nature and it is also easy to transact. In the year 2011 Out of 82,400 Bank branches nearly 74,680 branches were NEFT enabled branches in India. RBI has taken the steps to further widen the coverage of Banks. Therefore, there is an increasing trend in NEFT payments in India. The minimum amount of money transfer limit for RTGS is two lakh but for NEFT there is no limit.

**Trends in ECS–Credits of Banks in India:**

The ECS-credits of Banks in India is plotted on the graph in order to trace the movements. The following graph presents the trends in terms of ECS-credits in India.
Graph 4.5 Trends in ECS-Credits of Banks in India (rupees in Crore)

![Value of ECS credit](image)

Source: ([Report On Trend And Progress Of Banking In India 2012-13](#))

Graph 4.6 Trends in ECS-Deposits of Banks in India (rupees in Crore)

The ECS-deposits of Banks in India are plotted on the graph in order to trace the movements. The following graph presents the trends in terms of ECS-deposits in India.

![Value of ECS deposit](image)

Source: ([Report on Trend And Progress Of Banking In India 2012-13](#))

The above graph clearly presents the trends in ECS-credits in India. It has been found from the graph that ECS-credits have shown an increasing trend and it is continued during the period of ICT penetration. The ECS-deposits of Banks in India are plotted on the graph in order to trace the movements. The above graph presents the trends in terms of ECS-deposits in India. The graph clearly presents the trends in ECS-deposits in India. It has been found from the graph that ECS-deposits have shown an increasing trend and it is continued during the period of ICT penetration, but gradually stagnated during the later
part of the ICT penetration period. ECS debit transactions have increased from 145.55 million in 2009 – 10 to 156.12 million in 2011 – 12 and the ECS credit transaction has also increased from 98.55 million in 2009 – 10 to 125.5 million in 2011 – 12. The ECS credit based transaction is increasing at a faster rate in India. It is noticed that average monthly volumes of ECS are 8.05 million transactions.

**Trends in MICR Clearings of Banks in India:**

The MICR clearings of Banks in India are plotted on the graph in order to trace the movements. The following graph presents the trends in terms of MICR clearings in India.

**Graph 4.7 Trends in MICR Clearings of Banks in India (rupees in Crore)**

![Graph](image)

Source: ([Report On Trend And Progress Of Banking In India 2012-13](#))

The above graph clearly presents the trends in MICR clearings in India. It has been found from the graph that MICR clearings have shown slightly an increasing trend during pre-ICT penetration period and gradually decreased after the introduction of cheque truncation system in 2008. It was a project taken by the RBI to make faster clearance of cheques. CTS has the feature of the Shorter clearing cycle and Superior verification and reconciliation process than MICR. In this background MICR is showing a declining trend after 2008.
Trends in ATMs of Banks in India:

The number of ATMs of Banks in India is plotted on the graph in order to trace the movements. The following graph presents the trends in terms of number ATMs in India.

Graph 4.8 Trends in ATMs of Banks in India (In Numbers)

Source: (Report On Trend And Progress Of Banking In India 2012-13)

The above graph clearly presents the trends in the number of ATMs in India. It has been found from the graph that ATMs have shown slightly an increasing trend during pre-ICT penetration period and it has further increased during the period of ICT penetration. During 2009-10 there were 43,651 ATM centers in India then it increased to 60,153 in 2010-11 and among public sector Banks, State Bank grouped has the highest number of ATM centers in the country. There were 74,505 in 2011–12. The average output ratio of one ATM is 13333 per Indian. Among all E-Banking services, ATM service has become the most popular and convenient method so there is an increasing trend in the growth of ATM centers in India.

Table- No- 4.6 Debit Cards Issued by Commercial Banks (in millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Debit cards issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-08</td>
<td>74.98</td>
</tr>
<tr>
<td>2008-09</td>
<td>102.44</td>
</tr>
<tr>
<td>2009-10</td>
<td>137.43</td>
</tr>
<tr>
<td>2010-11</td>
<td>181.97</td>
</tr>
<tr>
<td>2011-12</td>
<td>227.84</td>
</tr>
</tbody>
</table>

(Source: RBI annual bulletin)
Diagram -No- 4.5 Debit Cards Issued by Commercial Banks (In millions)

In the above figure debit cards issued by Commercial Banks from 2007-08 to 2011-12 are shown. In the financial year 2007-08 Commercial Banks issued 74.98 million debit cards to their customers. Then gradually Commercial Banks due to increase in the demand for debit cards from their customers issued 181.97 million debit cards in the year 2010-11. In the year 2011-12 they provided 227.84 million debit cards.

Table-no- 4.7 Credit Cards Issued by Commercial Banks (In millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Credit cards issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-08</td>
<td>23.12</td>
</tr>
<tr>
<td>2008-09</td>
<td>27.55</td>
</tr>
<tr>
<td>2009-10</td>
<td>24.70</td>
</tr>
<tr>
<td>2010-11</td>
<td>18.33</td>
</tr>
<tr>
<td>2011-12</td>
<td>18.04</td>
</tr>
</tbody>
</table>

(Source: RBI annual bulletin)
Plastic money today has attracted Indians in many ways. No need to hold bundles of notes in pockets for shopping with the help of credit cards can purchase goods and services. In the year 2007-08 23.12 million credit cards were issued by Commercial Banks. Credit card distribution by Banks increased up to 2009-10 during that period 24.70 million customers got benefited by this, but gradually people got aware that credit card usage makes man spendthrift and wasteful expenditure increases. Since two years Banks are charging for holding credit cards and for the middle class section it would be a burden. Therefore, after 2009-10 credit card usage decreased to 18.33 million further it decreased to 18.04 in 2011-12.

**Table-no- 4.8 Computerization of Bank Branches in India (2011)**

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Categories Of Banks</th>
<th>Level of Computerisation in percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Public sector Banks</td>
<td>97.8</td>
</tr>
<tr>
<td>2</td>
<td>Private sector Banks</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>Foreign Banks</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>UCBs</td>
<td>32</td>
</tr>
</tbody>
</table>

(Source: [Report on Trend and Progress of Banking In India 2010-11](#))
The above figure shows that both Private And Foreign Banks have computerized all the branches and Public Sector Banks have computerized 97.8 percent of branches, but only 32 percent of branches of UCBs are computerized in India. Due to many reasons such as lack of capital, lack of managerial skills, lack of technical knowledge in employees, etc. have made UCBs to hesitate to computerize their branches and lagging behind in adopting E- Banking services. This trend may make UCBs to lose their customers further in future.

Just a handful of UCBs have implemented CBS (Core Banking System). Several Banks are at a preliminary stage in accepting technology based services. They need to adopt technology in their Banking transaction to be stronger in improving risk management aspects. Technology infrastructure does not become a major impediment to commercial Banks but it is an expensive factor to UCBs.

Banks have taken significant steps to spend on IT related services in banks. Introducing new products/services and upgrading appropriate technology have become a fashion as well as a passion in this sector. Business optimization is a big dream to banks at present, ICT adoption involves a long journey and a continuous evolution because technology is not a stagnant but it is like flowing water. The technology revolution has given birth to many innovative products in the banking sector. It is the outcome of huge investment on IT issues by Banks. Technology in the Indian Banking Sector is finding new avenues to catch up high levels of performance. The banking sector in India is showing competitive and dynamic environment. To survive in this competitive business world Bank is also altering and redesigning their business strategies with attractive ICT tools to their customers.
4.4 Security Issues and Cost of E-Banking Transaction

Customers in the modern age have great concern about privacy and security issues, even educated customers also sometimes get caught up in security and privacy related problems.

Safety and security issues involved in TCT based services have become a great concern. Usually hackers for different reasons steal information of customers online such as monetary gain, sadistic attitude and curiosity so on. Spamming, ATM and credit card frauds, Unauthorized entry, Money laundering and theft nowadays have become a great headache to both Banks and customers. Hackers create websites and they resemble to Banks original website and send email to random customers and ask them to give their card information and PIN code. Phishing is a technique used by third party to attack the online Banking customers to obtain Banking credentials. The attackers convince the customers by designing fake websites with all codes with original sites they have and attacker send email to customers, but customers without any suspicion send their information then the attackers make them victims.

Chart. No-4.1 Security Issues in E-Banking Transactions
- Misusing, cheating, stealing credit cards, smart cards, ATM cards.
- Misusing passwords and user ID
- Theft of messages in mobile phones and fraudulent transactions
- Hacking accounts in Internet
- Illegal transfer of funds
- Configuration problem
- Getting cheated due to customers’ careless attitude, lack of precautions and awareness
- Security problem in ATM Centre to Customers

Table-no- 4.9 Technology – related Frauds in Indian Banks

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount involved (rupees in Crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008−09</td>
<td>63.38</td>
</tr>
<tr>
<td>2009−10</td>
<td>40.03</td>
</tr>
<tr>
<td>2010−11</td>
<td>38.46</td>
</tr>
<tr>
<td>2011−12</td>
<td>47.45</td>
</tr>
<tr>
<td>2012−13</td>
<td>67.36</td>
</tr>
</tbody>
</table>

Source : - (Source: (Report on Trend and Progress Of Banking In India 2012-13))

Graph 4.9 Technology – related Frauds in Indian Banks

The number of ATM machines has grown from 34789 in March 2008 to 114014 in March 2013, the number of POS transactions has also doubled from 423667 crore to
845653 crore during the same period. Over 2010 net Banking and mobile Banking became popular in India. The overall picture with regard to frauds is certainly heart – touching and according to the information of the RBI majority of frauds are happening in ATM centers and shopping malls. It is clear from the above table that, as compared to the amount involved in the financial year 2008 – 09 i.e. 63.38 crore the amount involved in technology related frauds in 2009 – 10 i.e. 40.03 crore is better. Due to the strong policy measures of RBI the amount involved in this type of fraud has declined. The number of fraudulent transactions is showing a very high figure, i.e. 67.36 crore during 2012-13 due to increase in the number of digitalized Banks, increase in service delivery points like ATMs and Point of Sale (POS) terminals which have also gone up rapidly. This in turn clearly proves that Banks have to take quick action to check these frauds. Otherwise, Banks have to undergo losses which in turn adversely affect the smooth functioning. This may also make customers to lose confidence in E – Banking in the coming years. Such frauds in Banks do not speak well of Banks and this should be checked in the coming years. If suitable directions are not there either from the R.B.I or the financial heads of concerned Banks, any amount of technology adoption becomes a waste.
Section –B

Impact of ICT on the Performance of Indian Banking Sector

4.5 Introduction

The Banking sector with innovative technology is connecting both the unbanked and unreached sections of the economy and aiming to achieve financial inclusion digitally. Today, technology has become a powerful tool in transforming every aspect of the Banking sector. This trend is assuring tangible results of high customer base and growing performance. Indian Banks are scaling up their presence in Websites and Social media with the latest technological solutions to cater their customers especially the youth. Therefore, there is a great scope for technology up gradation in this sector. To open up new markets, to reach new customers, to increase the cost effectiveness and to provide transparent and attractive services in a satisfactory manner, ICT strategy is providing avenues to the Banking sector in many ways. The study period from 2003-04 to 2007-08 considered as period of technology up-gradation and period from 2008-09 to 2012-13 considered as period of rapid usage of technology. The following table presents the details about the division of the period.

Chart. No- 4.2 Division of Study Period

Three approaches have been used for the analysis of data; first, data presented with the help of graphs in order to observe the movement of the parameters. Second, t-test
and F-tests have been used for mean comparison of growth rates between all parameters of CBs and UCBs. Third, dummy variable regression analysis has been used to estimate the impact of ICT on the performance of CBs and UCBs. The study area chosen for the study in this part of analysis is entire India.

4.6. Trends in the Performance of Commercial Banks and UCBs in India

In this part analysis has been made to know the in the performance of Commercial Banks (CBs) and Urban Cooperative Banks (UCBs). In this analysis, estimation has been made with the help of quantitative parameters, namely; bank deposits, advances, investments, credit, deposit ratio, total business, number of branches and productivity of Banks and profitability of Banks. The comparison has been made between CBs and UCBs. The comparison is also made between periods in order to capture the impact of ICT. The criterion used for the division of period is based on level of ICT penetration. Data has been with the help of graphs and t-test and F-tests have been used for mean comparison of growth rates among all parameters of CBs and UCBs. A detailed analysis has been made in the following headings.

Trends in Total Deposits of Banks:

The total deposits of CBs and UCBs plotted on the graph in order to trace their movements. The following graph presents the trends in the AGR of total deposits of CBs and UCBs.

Graph 4.10 Trends in Total Deposits of Banks
(In terms of growth, in crore)

Source: (Report on Trend And Progress Of Banking In India 2012-13)
The above graph clearly presents the relative trends in deposits of CBs and UCBs. It has been found from the graph that deposits of CBs were more compared to deposits of UCBs. Deposits of CBs have shown increasing trend and deposits of UCBs have not shown an increasing trend. In the following section an attempt has been made to compare the growth of deposits of CBs and UCBs. From the year 2009 to 2012 the world economy has found a very bad situation due to global crisis. The economic fluctuations in developed countries, especially in the USA and UK had a negative influence on the performance of Banking sector in developing countries. Therefore Commercial Banks of Indian economy during this period have shown decreasing trend in deposits. When Private Sector Banks revised their savings Bank deposit rates upwards in October 2011 then AGR of deposits of Commercial Banks increased positively.

Comparison of Deposits of Banks:

The average growth of deposits of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests are presented below.

<table>
<thead>
<tr>
<th>Banks</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error Mean</th>
<th>F</th>
<th>Sig</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBs</td>
<td>9</td>
<td>18.2267</td>
<td>1.57943</td>
<td>9.401</td>
<td>.007***</td>
<td>11.252</td>
<td>.000***</td>
</tr>
<tr>
<td>UCBs</td>
<td>9</td>
<td>.3967</td>
<td>.12789</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.
Note: ***Significant at one percent level.

The above table presents an average annual growth rate of deposits of CBs and UCBs. The average growth of deposits for CBs in India is 18.23 and it is 0.397 for UCBs. It is found from the F test that the variance between the two is significant. Therefore, equal variance is not assumed. It is found from t-test that the mean difference between the two is significant. Therefore, the performance of CBs significantly differs from UCBs in terms of growth of deposits. Accordingly, the performance of CBs is higher than UCBs in terms of average annual growth of deposits.
Trends in Advances of Banks:

The advances of CBs and UCBs plotted on the graph in order to trace their movements. The following graph presents the trends in AGR of the advances of CBs and UCBs.

Graph 4.11 Trends in Advances of Banks  
(In Crore Rupees)

Source: (Report On Trend And Progress Of Banking In India 2012-13)

The above graph clearly presents the relative trends in advances of CBs and UCBs. It has been found from the graph that the annual growth rate of advances of CBs was in decreasing trend as compared to the advances of UCBs. In the period of 2011-12 advances of both CBs and UCBs have shown increasing trend due to the guidelines of RBI. Shri M V Nair Committee submitted its report in February 2012 and recommended Commercial Banks to increase priority sector lending. Therefore, advances of Commercial Banks have increased during 2012-13. In the following section an attempt has been made to compare the growth of advances of CBs and UCBs. Global crises have actually hit private sector Banks and foreign Banks which are running their business in India. But UCBs being a pure desi Banks have not been affected by the international fluctuations.

Comparison of Advances of Banks:

The average annual growth of advances of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests have presented below
Table-no- 4.11 Comparison of Advances of Banks
(In terms of growth rate)

<table>
<thead>
<tr>
<th>Banks</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error Mean</th>
<th>F</th>
<th>Sig</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBs</td>
<td>9</td>
<td>23.31</td>
<td>2.445</td>
<td>4.135</td>
<td>.114</td>
<td>.740</td>
<td>0.001***</td>
</tr>
<tr>
<td>UCBs</td>
<td>9</td>
<td>9.23</td>
<td>2.368</td>
<td>.114</td>
<td>.740</td>
<td>4.135</td>
<td>0.001***</td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.
Note: ***Significant at one percent level.

The above table presents average annual growth rates of advances of CBs and UCBs. The average growth of advances for CBs in India is 23.31 and it is 9.23 for UCBs. It is found from the F test that the variance between the two is not significant. Therefore, equal variance is assumed. It is found from t-test that the mean difference between the two is significant. Therefore, the performance of CBs significantly differs from UCBs in terms of growth of advances. Accordingly, the performance of CBs is higher than UCBs in terms of average annual growth of advances.

Trends in Investments of Banks:

The investments of CBs and UCBs plotted on the graph in order to trace their movements. The following graph presents the trends in the investments of CBs and UCBs.

Graph 4.12 Trends in Investments of Banks
(In Crore Rupees)

Source: [Report On Trend And Progress Of Banking In India 2012-13]

The above graph clearly presents the relative trends in investments of CBs and UCBs. It has been found from the graph that investments of CBs were less as compared to investments of UCBs. Investments of CBs have shown decreasing trend and investments of UCBs have shown frequent fluctuations. Investments of Commercial
Banks are showing a decreasing trend after 2008-09 due to Banks preference to keep their funds in low risk and low return instruments to avoid uncertainties and risks.

The state government securities and other approved securities were very low in 2006-07 therefore, investments have decreased. Investments of UCBs have shown relatively higher growth after 2011-12 due to the sharp increase in SLR investments in this sector. But there was a marginal decline in the share of total assets of scheduled UCBs in 2010-11. Only 51 scheduled UCBs accounted for 3.2 per cent of all UCBs that means they had a share of half of the total assets of UCBs in India. It affected the investments of UCBs.

Comparison of Investments of Banks:

The average growth of investments of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests are presented below;

<table>
<thead>
<tr>
<th>Banks</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error Mean</th>
<th>F</th>
<th>Sig</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBs</td>
<td>9</td>
<td>11.95</td>
<td>2.953</td>
<td>0.555</td>
<td>0.467</td>
<td>0.371</td>
<td>0.716</td>
</tr>
<tr>
<td>UCBs</td>
<td>9</td>
<td>10.19</td>
<td>3.728</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.
Note: Not significant at one percent level.

The above table presents average growth rates of investments of CBs and UCBs. The average growth of investments for CBs in India is 11.95 and it is 10.19 for UCBs. It is found from the F test that the variance between the two is not significant. Therefore, equal variance assumed. It is found from t-test that the mean difference between the two is not significant. Therefore, the performance of CBs is less as compared to UCBs in terms of growth of investments.

Trends in Total Business of Banks:

The total business of CBs and UCBs is plotted on the graph in order to trace their movements. The following graph presents the trends in total business of CBs and UCBs.
The above graph clearly presents the relative trends in total business of CBs and UCBs. It has been found from the graph AGR of the total business of CBs showing a decreasing trend was more compared to total business of UCBs. The total business of CBs has shown increasing trend and total business of UCBs have shown an increasing trend after 2006-07. In the following section an attempt has been compared the growth of the total business of CBs and UCBs. The total business comprises total advances, total deposits and total investments. After the year 2006 there is an increasing trend in both advances and investments of UCBs therefore the above graph is showing an upward trend in the total business of UCBs as compared to Commercial Banks but during the same period there was a severe fall in total investments due to preference of Commercial Banks to keep funds at low risk to avoid unwanted risks but after 2011-12 there was a sharp increase in SLR investments and increase in total advances so, there is an upward in the trend the total business of Commercial Banks.

**Comparison of Total Business of Banks:**

The average growth of the total business of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests have presented below
Table-no- 4.13 Comparison of Total Business of Banks
(In terms of growth rate)

<table>
<thead>
<tr>
<th>Banks</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error Mean</th>
<th>F</th>
<th>Sig</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBs</td>
<td>9</td>
<td>20.1818</td>
<td>1.6537</td>
<td>1.507</td>
<td>.237</td>
<td>7.727***</td>
<td>0.000</td>
</tr>
<tr>
<td>UCBs</td>
<td>9</td>
<td>4.6124</td>
<td>1.15111</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.

Note: ***Significant at one percent level.

The above table presents average growth rates of the total business of CBs and UCBs. The average growth of total business for CBs in India is 22.18 and it is 4.61 for UCBs. It is found from the F test that the variance between the two is not significant. Therefore, equal variance assumed. It is found from t-test that the mean difference between the two is significant. Therefore, the performance of CBs significantly differs from UCBs in terms of average annual growth of total business. Accordingly, though Annual Growth Rate is higher in UCBs the Average Annual Growth Rate of CBs is significantly higher compared to UCBs in terms of total business.

**Trends in Expansion of Branches of Banks:**

The number of branches of CBs and UCBs plotted on the graph in order to trace their movements. The following graph presents the trends in the number of branches of CBs and UCBs.

**Graph 4.14 Trends in Number of Branches of Banks**
(In number)

Source: *(Report On Trend And Progress Of Banking In India 2012-13)*

The above graph clearly presents the relative trends in the number of branches of CBs and UCBs. It has been found from the graph that the number of branches of CBs was more compared to the number of branches of UCBs. Number of branches of CBs have
shown increasing trend and the number of branches of UCBs have not shown an increasing trend. From the period 2005-06 and 2010-11 annual growth of branches in UCBs is showing a negative trend due to the strict policy of RBI. This period is called a crisis period for UCBs. During that period RBI cancelled the license. Many UCBs which trespassed the rules had to close their business. But in the year 2011-12 again fresh license was given. After 2012-13 due to the increase in the number of defaulters branches were closed down and many UCBs came under liquidation stage therefore branch expansion found a declining trend. In the following section an attempt has been made to compare the growth of the number of branches of CBs and UCBs.

**Comparison of Number of Branches of Banks:**

The average growth of the number of branches of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests have presented below

<table>
<thead>
<tr>
<th>Banks</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error Mean</th>
<th>F</th>
<th>Sig</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBs</td>
<td>9</td>
<td>5.2329</td>
<td>0.93349</td>
<td>2.150</td>
<td>0.162</td>
<td>1.408</td>
<td>0.178</td>
</tr>
<tr>
<td>UCBs</td>
<td>9</td>
<td>.7745</td>
<td>3.02619</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.
Note: Not significant at one percent level.

The above table presents average growth rates of a number of branches of CBs and UCBs. The average growth of the number of branches for CBs in India is 5.23 and it is 0.78 for UCBs. It is found from the F test that the variance between the two is not significant. Therefore, equal variance assumed. It is found from t-test that the mean difference between the two is significant. Therefore, the performance of CBs significantly differs from UCBs in terms of growth of the number of branches. Accordingly, the performance of CBs is significantly higher compared to UCBs in terms of number of branches. The main reason for this difference is unit Banks are more in number than branch Banking system.
Trends in Labour Productivity in terms of Deposits per Employee:

The Labour Productivity in Terms of deposit per employee Of CBs and UCBs Plotted on the graph in order to trace their movements. The following graph presents the trends in labour productivity in terms of deposit per employee of CBs and UCBs.

Graph 4.15 Trends in Labour Productivity in terms of Deposit per Employee of Banks

(In terms of Numbers of Deposits)

Source: (Report On Trend And Progress Of Banking In India 2012-13)

The above graph clearly presents the relative trends in deposits per employee of CBs and UCBs. It has been found from the graph that deposits per employee of CBs were more compared to deposits per employee of UCBs. Deposits per employee of CBs have shown increasing trend and deposits per employee of UCBs have shown decreasing trend due to the lack of human capital programmes which could improve the efficiency of employees and to achieve higher targets. In the following section an attempt has been compared the average growth of deposits per employee of CBs and UCBs.

Comparison of Deposits per Employee of Banks:

The average growth of deposits per employee of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests have presented below;
### Table-no- 4.15 Comparison of Deposits per Employee of Banks

(\textit{In terms of growth numbers})

<table>
<thead>
<tr>
<th>Banks</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error Mean</th>
<th>F</th>
<th>Sig</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBs</td>
<td>9</td>
<td>14.7267</td>
<td>3.42652</td>
<td>0.003</td>
<td>0.959</td>
<td>3.474***</td>
<td>0.003</td>
</tr>
<tr>
<td>UCBs</td>
<td>9</td>
<td>-1.1492</td>
<td>3.02345</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.

Note: ***Significant at one percent level.

The above table presents average growth rates of deposits per employee of CBs and UCBs. The average growth of deposits per employee for CBs in India is 14.73 and it is -1.15 for UCBs. It is found from the F test that the variance between the two is not significant. Therefore, equal variance assumed. It is found from t-test that the mean difference between the two is significant. Therefore, the performance of CBs significantly differs from UCBs in terms of growth of deposits per employee. Accordingly, the performance of CBs is significantly higher compared to UCBs in terms of deposits per employee.

**Trends in Labour Productivity in terms of Advances per Employee:**

The labour productivity in terms of advances per employee of CBs and UCBs plotted on the graph in order to trace their movements. The following graph presents the trends in labour productivity in terms of advances per employee of CBs and UCBs.

**Graph 4.16 Trends in Labour Productivity in terms of Advances per Employee of Banks**

(\textit{In terms of Numbers of Advances})

Source: (\textit{Report On Trend And Progress Of Banking In India 2012-13})
The above graph clearly presents the relative trends in advances per employee of CBs and UCBs. It has been found from the graph that advances per employee of CBs were more compared to advances per employee of UCBs. Advances per employee of CBs have shown increasing trend and deposits per employee of UCBs have also shown an increasing trend. In the following section an attempt has been made to compare the average growth of advances per employee of CBs and UCBs.

**Comparison of Advances per Employee of Banks:**

The average growth of advances per employee of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests have presented below;

<table>
<thead>
<tr>
<th>Banks</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error Mean</th>
<th>F</th>
<th>Sig</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBs</td>
<td>9</td>
<td>20.0782</td>
<td>5.08630</td>
<td>0.504</td>
<td>0.488</td>
<td>1.999</td>
<td>0.063</td>
</tr>
<tr>
<td>UCBs</td>
<td>9</td>
<td>7.1418</td>
<td>4.00255</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.
Note: Not significant at one percent level.

The above table presents average growth rates of advances per employee of CBs and UCBs. The average growth of advances per employee for CBs in India is 20.08 and it is 7.14 for UCBs. It is found from the F test that the variance between the two is not significant. Therefore, equal variance assumed. It is found from t-test that the mean difference between the two is not significant. Therefore, the performance of CBs is significantly not differing from UCBs in terms of growth of advances per employee. Accordingly, the performance of CBs is little higher compared to UCBs in terms of advances per employee.

**Trends in Labour Productivity in terms of Business per Employee:**

The labour productivity in terms of business per employee of CBs and UCBs is plotted on the graph in order to trace their movements. The following graph presents the trends in labour productivity in terms of business per employee of CBs and UCBs.
Graph 4.17  Trends in Labour Productivity in terms of Business per Employee of Banks
(In terms of Numbers of Business)

The above graph clearly presents the relative trends in business per employee of CBs and UCBs. It has been found from the graph that business per employee of CBs was more compared to business per employee of UCBs. Business per employee of CBs have shown increasing trend and business per employee of UCBs have also shown an increasing trend. In the following section an attempt has been made to compare the growth of business per employee of CBs and UCBs.

Comparison of Business per Employee of Banks:

The average growth of business per employee of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests have presented below;

<table>
<thead>
<tr>
<th>Table-no- 4.17 Comparison of Business per Employee of Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>(In terms of numbers)</td>
</tr>
<tr>
<td>Banks</td>
</tr>
<tr>
<td>CBs</td>
</tr>
<tr>
<td>UCBs</td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.
Note: **Significant at one percent level.

The above table presents average growth rates of business per employee of CBs and UCBs. The average growth of business per employee for CBs in India is 16.16 and it
is 3.29 for UCBs. It is found from the F test that the variance between the two is not significant. Therefore, equal variance assumed. It is found from t-test that the mean difference between the two is significant. Therefore, the performance of CBs significantly differs from UCBs in terms of growth of business per employee. Accordingly, the performance of CBs is significantly higher compared to UCBs in terms of business per employee.

**Trends in Branch Productivity in terms of Deposits per Branch:**

The branch productivity in terms of deposits per branch of CBs and UCBs plotted on the graph in order to trace their movements. The following graph presents the trends in branch productivity in terms of deposits per branch of CBs and UCBs.

**Graph 4.18 Trends in Branch Productivity in terms of Deposits per Branch of Banks (In terms of Numbers of Deposits)**

Source: (Report On Trend And Progress Of Banking In India 2012-13)

The above graph clearly presents the relative trends in deposit per branch of CBs and UCBs. It has been found from the graph that deposit per branch of CBs was more compared to deposit per branch of UCBs. Deposit per branch of CBs have shown increasing trend and deposit per branch of UCBs have not shown an increasing trend. As compared to the branches of Commercial Banks UCBs have lesser number of branches. therefore, Branch Productivity in terms of Deposits per Branch of Commercial Banks is higher than UCBs. In the following section an attempt has been made to compare the growth of deposit per branch of CBs and UCBs.
Comparison of Deposits per Branch of Banks:

The average growth of deposit per branch of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests have presented below:

<table>
<thead>
<tr>
<th>Banks</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error Mean</th>
<th>F</th>
<th>Sig</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBs</td>
<td>9</td>
<td>12.4466</td>
<td>1.90042</td>
<td>0.709</td>
<td>0.412</td>
<td>3.158***</td>
<td>0.006</td>
</tr>
<tr>
<td>UCBs</td>
<td>9</td>
<td>1.0680</td>
<td>3.06106</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.

Note: **Significant at one percent level.

The above table presents average growth rates of deposits per branch of CBs and UCBs. The average growth of deposits per branch for CBs in India is 12.45 and it is 1.07 for UCBs. It is found from the F test that the variance between the two is not significant. Therefore, equal variance assumed. It is found from t-test that the mean difference between the two is significant. Therefore, the performance of CBs significantly differs from UCBs in terms of growth of deposits per branch. Accordingly, the performance of CBs is significantly higher compared to UCBs in terms of deposits per branch.

Trends in Branch Productivity in terms of Advances per Branch:

The branch productivity in terms of advances per branch of CBs and UCBs plotted on the graph in order to trace their movements. The following graph presents the trends in branch productivity in terms of advances per branch of CBs and UCBs.
Graph 4.19 Trends in Branch Productivity in terms of Advances per Branch of Banks

(In terms of Numbers of Advances)

The above graph clearly presents the relative trends in advances per branch of CBs and UCBs. It has been found from the graph that advances per branch of CBs were more compared to advances per branch of UCBs. Advances per branch of CBs have shown increasing trend and advances per branch of UCBs have shown slightly an increasing trend. In the following section an attempt has been made to compare the growth of advances per branch of CBs and UCBs.

Comparison of Advances per Branch of Banks:

The average growth of advances per branch of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests have presented below;

<table>
<thead>
<tr>
<th>Banks</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error Mean</th>
<th>F</th>
<th>Sig</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBs</td>
<td>9</td>
<td>39.711</td>
<td>7.48046</td>
<td>0.767</td>
<td>0.394</td>
<td>2.168</td>
<td>0.046</td>
</tr>
<tr>
<td>UCBs</td>
<td>9</td>
<td>17.122</td>
<td>7.24975</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.
Note: **Significant at five percent level.

The above table presents average growth rates of advances per branch of CBs and UCBs. The average growth of advances per branch for CBs in India is 39.71and it is 17.12 for UCBs. It is found from the F test that the variance between the two is not
significant. Therefore, equal variance assumed. It is found from t-test that the mean difference between the two is significant. Therefore, the performance of CBs significantly differs from UCBs in terms of growth of advances per branch. Accordingly, the performance of CBs is significantly higher compared to UCBs in terms of advances per branch.

**Trends in Branch Productivity in terms of Business per Branch:**

The branch productivity in terms of business per branch of CBs and UCBs plotted on the graph in order to trace their movements. The following graph presents the trends in branch productivity in terms of business per branch of CBs and UCBs.

**Graph 4.20 Trends in Branch Productivity in terms of Business per Branch of Banks (In terms of Numbers of Businesses)**

Source: [Report On Trend And Progress Of Banking In India 2012-13](#)

The above graph clearly presents the relative trends in business per branch of CBs and UCBs. It has been found from the graph that businesses per branch of CBs were more compared to businesses per branch of UCBs. Businesses per branch of CBs have shown increasing trend and businesses per branch of UCBs have shown an increasing trend at a decreasing rate. It is quite natural that total advances, total deposits and total investments are higher in Commercial Banks than in UCBs in absolute terms. In the following section an attempt has been made to compare the growth of businesses per branch of CBs and UCBs.

**Comparison of Business per Branch of Banks:**

The average growth of businesses per branch of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests have presented below;
Table-no- 4.20 Comparison of Business per Branch of Banks  
(In terms of numbers)

<table>
<thead>
<tr>
<th>Banks</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error</th>
<th>Mean</th>
<th>F</th>
<th>Sig</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBs</td>
<td>9</td>
<td>14.3078</td>
<td>2.12507</td>
<td></td>
<td>2.801</td>
<td>.114</td>
<td>1.749</td>
<td></td>
</tr>
<tr>
<td>UCBs</td>
<td>9</td>
<td>7.0453</td>
<td>3.56822</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.  
Note: Not significant at five percent level.

The above table presents average growth rates of business per branch of CBs and UCBs. The average growth of business per branch for CBs in India is 14.31 and it is 7.05 for UCBs. It is found from the F test that the variance between the two is not significant. Therefore, equal variance assumed. It is found from t-test that the mean difference between the two is not significant. Therefore, the performance of CBs is not significantly differing from UCBs in terms of growth of business per branch. The growth rate of business per branch shows that due to the less number of UCBs as compared to Commercial Banks business per branch is higher in UCBs. Accordingly, the performance of CBs is not significantly high compared to UCBs in terms of business per branch.  

**Trends in Returns on Investment of Banks:**

The returns on investment of CBs and UCBs plotted on the graph in order to trace their movements. The following graph presents the trends in terms of returns on investment of CBs and UCBs.

**Graph- 4.21 Trends in Returns on Investment of Banks**
(In terms of percentage)

Source: [Report On Trend And Progress Of Banking In India 2012-13](#)
The above graph clearly presents the relative trends in returns on investment of CBs and UCBs. It has been found from the graph that returns on investment of CBs were more comparable to returns on investment of UCBs. Returns on investment of CBs have shown increasing trend and returns on investment of UCBs have shown a flat trend because as compared to Commercial Banks UCBs are small in number so, returns on investment of UCBs is higher in absolute term. In the following section an attempt has been made to compare the growth of returns on investment of CBs and UCBs.

**Comparison of Returns on Investment of Banks:**

This analysis has taken an average growth rate of returns on investment of Banks. A study has compared CBs and UCBs with the help of independent sample t-test. The results of the tests have presented below;

| Table-no- 4.21 Comparison of Returns on Investment of Banks (In terms of percentage) |
|-----------------------------|----------------|----------------|----------|----------|-----------------|---------------|
| Banks | N | Mean | Std. Error Mean | F | Sig | t | Sig |
| CBs | 9 | 22.0579 | 10.26372 | 2.307 | 0.148 | -0.588 | 0.565 |
| UCBs | 9 | 33.1697 | 15.87296 | | | | |

Source: Computed by Researcher.
Note: Not significant at five percent level.

The above table presents average growth rates of returns on investment of CBs and UCBs. It clearly shows that the average growth of returns on investment for CBs in India is 22.06 and it is 33.17 for UCBs. It is found from the F test that the variance between the two is not significant. Therefore, equal variance assumed. It is found from t-test that the mean difference between the two is not significant. Therefore, in terms of average growth rate the performance of CBs is not significantly different from UCBs in terms of growth of returns on investment. UCBs have maximized their volume of wealth by maximizing the return on their investment and investment of UCBs have shown an increasing trend.

This section discusses the trends in performance, productivity and profitability of Commercial Banks and UCBs of India. T-test, F-test and graphical methods have been used to understand and evaluate the growth and progress of both types of the banking sector. Here analyses have been made by dividing the study period on the basis of ICT penetration in the banking sector in India. The above analysis clearly shows that
It is found from the present study that, out of twelve parameters such as deposits, advances, investment, total Business, number of branches, deposits per employee, advances per employee, total business per employee, deposits per branch, advances per branch, total business per branch and returns on investment only four parameters viz, total investments, advances per Employee, business per branch and returns on investment have shown that there is no significant difference between the type of bank selected for the study such as Commercial Banks and UCBs and trends in their performance in India. Performance of Commercial Banks is better than UCBs due to its loan recovery process, deposit mobilization, diversification of activities. Rapid expansion of branches of Commercial Banks in both rural and urban areas have contributed to the increase in productivity of these banks.

But, UCBs are not showing overall improvement in their performance. The study period from 2003-04 to 2007-08 i.e. period of technology up-gradation and period from 2008-09 to 2012-13 i.e. periods of rapid usage of technology show that there is a positive trend in total investments, advances per employee, business per branch and returns on investment in case of both Commercial Banks and UCBs due to the sharp increase in SLR investments in UCBs. But there is a significant difference between Commercial Banks and UCBs in remaining eight parameters.

As compared to Commercial Banks UCBs need to make use of technology based services to intensify cut throat competition, have to increase customer base and have to achieve better performance. Therefore, there is an urgent need to increase productivity and financial performance of UCBs. This sector should give priority to human resource development through training and should start E-Banking services to a maximum extent.

4.7 Impact of ICT on the Performance of Indian Banking Sector

In this part of analysis an attempt has been made to analyze the impact of information communication technologies (ICT) on the performance of Commercial Banks (CBs) and Urban Cooperative Banks (UCBs). ICT has been considered as qualitative parameter and its impact has been estimated on quantitative parameters, namely: Bank deposits, advances, investments, credit, deposit ratio, total business, number of branches, and productivity of Banks and profitability of Banks. The comparison has been made between CBs and UCBs. The comparison is also made between two periods in order to
capture the impact of ICT. The criterion used for the division of period and it is based on level of ICT penetration.

**Impact of ICT on Deposits of CBs and UCBs:**

Impact of ICT on deposits of CBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

$$DCB = \alpha + \beta (D1) + \varepsilon$$

Where;

DCB: Deposits of CBs,

D1: 1 if period of rapid usage of technology, zero if period of technology upgradation.

$\alpha$: represents benchmark, which is the average deposit during the period of technology upgradation.

$\beta$: difference in deposits between benchmark and period of rapid usage of technology. $\beta$ also represents the impact of ICT on deposits of CBs

$\varepsilon$: represents the error.

The results of the models are presented below;

$$DCB = 1925988 + 2765259 (D1)$$

$^t$ $\quad (5.156) \quad (5.234)$

$\text{Sig: } (0.001) \quad (0.001)$

$F: 27.397 \quad \text{Sig: } 0.001$

Impact of ICT on deposits of UCBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

$$DUCB = \alpha + \beta (D1) + \varepsilon$$

Where;
DUCB: Deposits of UCBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

α: represents benchmark, which is the average deposit during the period of technology up-gradation.

β: difference in deposits between benchmark and period of rapid usage of technology. β also represents the impact of ICT on deposits of UCBs.

ε: represents the error.

The results of the models are presented below;

\[ \text{DUCB} = \alpha + \beta \] (D1)

\[ \text{DUCB} = 93687 + 1911 \text{ (D1)} \]

\[ t: \quad (306.264) \quad (4.418) \]

\[ \text{Sig:} \quad (0.000) \quad (0.002) \]

\[ \text{F: 19.517} \quad \text{Sig: 0.002} \]

In the above model, F explains the total variability of the model and it is significant at the one percent level. Accordingly variability in the dependent variable is significantly explained by the independent variable D1. Period of technology up-gradation was considered as a benchmark and the average deposit during the period of technology up-gradation was 1925988 crore rupees. β1 explains the difference in deposits between benchmark and periods of rapid usage of technology and the difference is 2765259 crore rupees. The difference is statistically significant at the one percent level. In the above model, F explains the total variability of the model and it is significant at the one percent level. Accordingly variability in the dependent variable is significantly explained by the independent variable D1. Period of technology up-gradation was considered as a benchmark and the average deposit during the period of technology up-gradation was 93687 crore rupees. β1 explains the difference in deposits between benchmark and periods of rapid usage of technology and the difference is 1911 crore rupees. The difference is statistically significant at the one percent level. Therefore, ICT has made a significant impact on growth of deposits of both CBs and UCBs.
**Impact of ICT on Advances of CBs and UCBs:**

Impact of ICT on advances of CBs in India has been estimated with the help of a dummy variable regression model. The model is given by:

\[ \text{ACB} = \alpha + \beta \text{(D1)} + \varepsilon \]

Where;

ACB: Advances of CBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

\( \alpha \): represents benchmark, which is the average advance during the period of technology up-gradation.

\( \beta \): difference in advances between benchmark and period of rapid usage of technology. \( \beta \) also represents the impact of ICT on advances of CBs

\( \varepsilon \): represents the error.

The results of the models are presented below;

\[ \text{ACB} = 1250451 + 2292997 \text{(D1)} \]

\[ t: (3.855) \quad (4.999) \]

\[ \text{Sig:} \quad (0.005) \quad (0.001) \]

\[ F: 24.985 \quad \text{Sig:} \quad 0.001 \]

Impact of ICT on advances of UCBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

\[ \text{AUCB} = \alpha + \beta \text{(D1)} + \varepsilon \]

Where;

AUCB: Advances of UCBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.
α: represents benchmark, which is average advances during the period of technology up-gradation.

β: difference in advances between benchmark and period of rapid usage of technology. β also represents the impact of ICT on advances of UCBs.

ev: represents the error.

The results of the models are presented below;

\[
AUCB = \alpha + \beta \quad \text{(D1)}
\]

\[
\land AUCB = 66677 + 35130 \quad \text{(D1)}
\]

- t: \((9.597) \quad (3.575)\)
- Sig: \((0.000) \quad (0.007)\)

- F: 12.783 \quad \text{Sig: 0.007}

In the above model, F explains the total variability of the model and it is significant at the one percent level. Accordingly variability in the dependent variable is significantly explained by the independent variable D1. Period of technology up-gradation was considered as a benchmark and the average advances during the period of technology up-gradation was 1250451 crore rupees. β1 explains the difference in advances between benchmark and periods of rapid usage of technology and the difference is 2292997 crore rupees. The difference is statistically significant at the one percent level. In the above model, F explains the total variability of the model and it is significant at the one percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable D1. Period of technology up-gradation was considered as a benchmark and the average advances during the period of technology up-gradation was 66677 crore rupees. β1 explains the difference in advances between benchmark and periods of rapid usage of technology and the difference is 35130 crore rupees. The difference is statistically significant at the one percent level. Therefore, ICT has made a significant impact on growth of advances of UCBs and CBs.
Impact of ICT on Investments of CBs and UCBs:

Impact of ICT on investments of CBs in India has been estimated with the help of a dummy variable regression model. The model is given by:

\[
I_{CB} = \alpha + \beta (D1) + \epsilon
\]

Where;

\(I_{CB}\): Investments of CBs,
\(D1\): 1 if period of rapid usage of technology, zero if period of technology up-gradation.
\(\alpha\): represents benchmark, which is average investments during the period of technology up-gradation.
\(\beta\): difference in investments between benchmark and period of rapid usage of technology. \(\beta\) also represents the impact of ICT on investments of CBs
\(\epsilon\): represents the error.

The results of the models are presented below;

\[
I_{CB} = \alpha + \beta (D1)
\]

\[
\hat{I}_{CB} = 822126 + 611937 (D1)
\]

\[
t: (6.731) (3.542)
\]

\[
\text{Sig:} (0.000) (0.008)
\]

\[
F: 12.549 \quad \text{Sig:} 0.008
\]

Impact of ICT on investments of UCBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

\[
I_{UCB} = \alpha + \beta (D1) + \epsilon
\]

Where;

\(I_{UCB}\): Investments of UCBs,
\(D1\): 1 if period of rapid usage of technology, zero if period of technology up-gradation.
α: represents benchmark, which is average investments during the period of technology up-gradation.

β: difference in investment between benchmark and period of rapid usage of technology. β also represents the impact of ICT on investment of UCBs

ε: represents the error.

The results of the models are presented below;

\[ I_{UCB} = \alpha + \beta \ (D1) \]

\[ I_{UCB} = 51113 + 35157 \ (D1) \]

<table>
<thead>
<tr>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(10.046)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>(4.886)</td>
<td>(0.001)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.874</td>
<td>0.001</td>
</tr>
</tbody>
</table>

In the above model, F explains the total variability of the model and it is significant at the one percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable D1. Period of technology up-gradation was considered as a benchmark and the average investment during the period of technology up-gradation was 822126 crore rupees. \( \beta_1 \) explains the difference in investment between benchmark and periods of rapid usage of technology and the difference is 611937 crore rupees. The difference is statistically significant at the one percent level. In the above model, F explains the total variability of the model and it is significant at the one percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable D1. Period of technology up-gradation was considered as a benchmark and the average investments during the period of technology up-gradation was 51113 crore rupees. \( \beta_1 \) explains the difference in investments between benchmark and periods of rapid usage of technology and the difference is 35157 crore rupees. The difference is statistically significant at the one percent level. Therefore, ICT has also made a positive impact on the growth of investments of both CBs and UCBs.
Impact of ICT on Total Business of CBs and UCBs:

Impact of ICT on total business of CBs in India has been estimated with the help of a dummy variable regression model. The model is given by:

\[ TBCB = \alpha + \beta (D1) + \varepsilon \]

Where;

TBCB: total business of CBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

\( \alpha \): represents benchmark, which is average total business during the period of technology up-gradation.

\( \beta \): difference in credit deposit ratios between benchmark and period of rapid usage of technology. \( \beta \) also represents the impact of ICT on total business of CBs

\( \varepsilon \): represents the error.

The results of the models are presented below;

\[ TBCB = \alpha + \beta (D1) \]

\[ \hat{TBCB} = 3176440.2 + 5058256.6 (D1) \]

\[ t: \quad (4.558) \quad (5.133) \]

\[ \text{Sig:} \quad (0.002) \quad (0.001) \]

\[ F: 26.344 \quad \text{Sig:} 0.001 \]

Impact of ICT on total business of UCBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

\[ TBUCB = \alpha + \beta (D1) + \varepsilon \]

Where;

TBUCB: Total Business of UCBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

\( \alpha \): represents benchmark, which is average total business during the period of technology up-gradation.
\( \beta \): difference in credit deposit ratios between benchmark and period of rapid usage of technology. \( \beta \) also represents the impact of ICT on total business of UCBs

\( \epsilon \): represents the error.

The results of the models are presented below;

\[
TB_{UCB} = \alpha + \beta (D1)
\]

\( TB_{UCB} = 160364.4 + 37642 (D1) \)

\[
t: (22.835) (3.790)
\]

\[
Sig: (0.000) (0.005)
\]

\[
F: 22.835 \quad \text{Sig: 0.005}
\]

In the above model, \( F \) explains the total variability of the model and it is significant at the five percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable \( D1 \). Period of technology up-gradation was considered as a benchmark and the average total business during the period of technology up-gradation was 31764.2 crore rupees. \( \beta_1 \) explains the difference in total business between benchmark and periods of rapid usage of technology and the difference is 5058256.6 crore rupees. The difference is statistically significant at the one percent level. \( F \) explains the total variability of the model and it is significant at the one percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable \( D1 \). Period of technology up-gradation was considered as a benchmark and the average total business during the period of technology up-gradation was 160364.4 crore rupees. \( \beta_1 \) explains the difference in total business between benchmark and periods of rapid usage of technology and the difference is 37642 crore rupees. The difference is statistically significant at the one percent level. Therefore, ICT has made a significant impact on the growth of the total business of both CBs and UCBs.

**Impact of ICT on Number of Branches of CBs and UCBs:**

Impact of ICT on the number of branches of CBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

\[
NB_{CB} = \alpha + \beta (D1) + \epsilon
\]

Where;
NBCB: number of branches of CBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

\( \alpha \): represents benchmark, which is an average number of branches during the period of technology up-gradation.

\( \beta \): difference in credit deposit ratios between benchmark and period of rapid usage of technology. \( \beta \) also represents the impact of ICT on number of branches of CBs

\( \varepsilon \): represents error.

The results of the models are presented below;

\[ \text{NBCB} = \alpha + \beta (D1) \]

\[ \text{NBCB} = 53938 + 16116 (D1) \]

<table>
<thead>
<tr>
<th>t:</th>
<th>(20.790)</th>
<th>(4.393)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig:</td>
<td>(0.002)</td>
<td>(0.002)</td>
</tr>
</tbody>
</table>

F: 19.294  Sig: 0.002

Impact of ICT on number of branches of UCBs in India has been estimated with the help of dummy variable regression model. The model is given by;

\[ \text{NBUCB} = \alpha + \beta (D1) + \varepsilon \]

Where;

NBUCB: number of branches of UCBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

\( \alpha \): represents benchmark, which is an average number of branches during the period of technology up-gradation.

\( \beta \): difference in credit deposit ratios between benchmark and period of rapid usage of technology. \( \beta \) also represents the impact of ICT on the number of branches of UCBs

\( \varepsilon \): represents the error.
The results of the models are presented below;

\[ \text{NB}_{\text{UCB}} = \alpha + \beta \ (D1) \]
\[ \hat{\text{NB}}_{\text{UCB}} = 7552 + 96 \ (D1) \]
\[ t: \ (31.937) \ (0.288) \]
\[ \text{Sig: } (0.000) \ (0.780) \]
\[ F: 0.083 \ \text{Sig: } 0.780 \]

In the above model, \( F \) explains the total variability of the model and it is significant at the five percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable \( D1 \). Period of technology upgradation was considered as a benchmark and the average number of branches during the period of technology up-gradation was 53938. \( \beta_1 \) explains the difference in the number of branches between benchmark and periods of rapid usage of technology and the difference is 16116. The difference is statistically significant at the one percent level. Therefore, ICT has made a significant impact on growth of the number of branches of CBs. In the above model, \( F \) explains the total variability of the model and it is not significant at the one percent level. Accordingly, variability in the dependent variable is not significantly explained by the independent variable \( D1 \). Period of technology upgradation was considered as a benchmark and the average number of branches during the period of technology up-gradation was 7552. \( \beta_1 \) explains the difference in the number of branches between benchmark and periods of rapid usage of technology and the difference is 96. The difference is statistically not significant at the one percent level. Therefore, ICT has not made a significant impact on growth of the number of branches of UCBs but CBs are positively affected by ICT usage.

**Impact of ICT on Deposits per Employee of CBs and UCBs:**

Impact of ICT on deposits per employee of CBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

\[ \text{DPECB} = \alpha + \beta \ (D1) + \varepsilon \]

Where;
DPECB: deposits per employee of CBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

α: represents benchmark, which is average deposits per employee during the period of technology up-gradation.

β: difference in credit deposit ratios between benchmark and period of rapid usage of technology. β also represents the impact of ICT on deposits per employee of CBs

ε: represents the error.

The results of the models are presented below;

\[
DPECB = \alpha + \beta (D1)
\]

\[
\hat{DPECB} = 2.160 + 2.260 (D1)
\]

\[t: (8.572) (6.342)\]

\[Sig: (0.000) (0.000)\]

\[F: 40.217\]

Impact of ICT on deposits per employee of UCBs in India has been estimated with the help of dummy variable regression model. The model is given by;

\[
DPEUCB = \alpha + \beta (D1) + \varepsilon
\]

Where;

DPEUCB: deposits per employee of UCBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

α: represents benchmark, which is average deposits per employee during the period of technology up-gradation.

β: difference in credit deposit ratios between benchmark and period of rapid usage of technology. β also represents the impact of ICT on deposits per employee of UCBs

ε: represents the error.
The results of the models are presented below;

\[ \text{DPEUCB} = \alpha + \beta (D1) \]

\[ \text{DPEUCB} = 2.070 - 0.230 (D1) \]

\[ t: (36.310) \quad (-2.853) \]

\[ \text{Sig: (0.000) (0.021)} \]

\[ \text{F: 8.138 \quad Sig: 0.021} \]

In the above model, F explains the total variability of the model and it is significant at the five percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable D1. Period of technology upgradation was considered as a benchmark and the average deposits per employee during the period of technology upgradation were 2.16. \( \beta_1 \) explains the difference in deposits per employee between benchmark and periods of rapid usage of technology and the difference is 2.26. The difference is statistically significant at the one percent level. In the above model, F explains the total variability of the model and it is not significant at the one percent level. Accordingly, variability in the dependent variable is not significantly explained by the independent variable D1. Period of technology upgradation was considered as a benchmark and the average deposits per employee during the period of technology upgradation were 2.070. \( \beta_1 \) explains the difference in deposits per employee between benchmark and periods of rapid usage of technology and the difference is -0.230. The difference is statistically significant at the five percent level. Therefore, ICT has made a significantly negative impact on the average growth of deposits per employee of UCBs but ICT has made a significant impact on the average growth of deposits per employee of CBs.

**Impact of ICT on Advances per Employee of CBs and UCBs:**

Impact of ICT on advances per employee of CBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

\[ \text{APECB} = \alpha + \beta (D1) + \varepsilon \]

Where;
APECB: advances per employee of CBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

α: represents benchmark, which is average advances per employee during the period of technology up-gradation.

β: difference in advances per employee between benchmark and period of rapid usage of technology. β also represents the impact of ICT on advances per employee of CBs

ε: represents the error.

The results of the models are presented below;

$$APECB = \alpha + \beta (D1)$$

∧$$APECB = 1.42 + 1.900 (D1)$$

t: (5.876) (5.559)

Sig: (0.000) (0.001)

F: 39.908 Sig: 0.001

Impact of ICT on advances per employee of UCBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

$$APEUCB = \alpha + \beta (D1) + \varepsilon$$

Where;

APEUCB: advances per employee of UCBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

α: represents benchmark, which is average advances per employee during the period of technology up-gradation.

β: difference in advances per employee between benchmark and period of rapid usage of technology. β also represents the impact of ICT on advances per employee of UCBs

ε: represents the error.

The results of the models are presented below;

$$APEUCB = \alpha + \beta (D1)$$

∧$$APEUCB = 1.460 + 0.420 (D1)$$
In the above model, F explains the total variability of the model and it is significant at the five percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable D1. Period of technology up-gradation was considered as a benchmark and the average advances per employee during the period of technology up-gradation were 1.42. β1 explains the difference in advances per employee between benchmark and periods of rapid usage of technology and the difference is 1.90. The difference is statistically significant at the one percent level. In the above model, F explains the total variability of the model and it is significant at the one percent level. Accordingly, variability in the dependent variable is not significantly explained by the independent variable D1. Period of technology up-gradation was considered as a benchmark and the average advances per employee during the period of technology up-gradation were 1.46. β1 explains the difference in advances per employee between benchmark and periods of rapid usage of technology and the difference is 0.42. The difference is statistically significant at the five percent level. Therefore, ICT has made a significant impact on growth of advances per employee of both CBs and UCBs.

**Impact of ICT on Business per Employee of CBs and UCBs:**

Impact of ICT on business per employee of CBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

\[ BPECB = \alpha + \beta (D1) + \varepsilon \]

Where;

BPECB: business per employee of CBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

α: represents benchmark, which is average business per employee during the period of technology up-gradation.

β: difference in business per employee between benchmark and period of rapid usage of technology. β also represents the impact of ICT on business per employee of CBs.
ε: represents the error.

The results of the models are presented below;

\[ B_{PECB} = \alpha + \beta (D1) \]

\[ \Delta B_{PECB} = 3.620 + 4.160 (D1) \]

\[ t: \quad (7.608) \quad (6.182) \]

\[ \text{Sig:} \quad (0.000) \quad (0.000) \]

\[ F: 38.219 \quad \text{Sig:} \quad 0.000 \]

Impact of ICT on business per employee of UCBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

\[ B_{PEUCB} = \alpha + \beta (D1) + \epsilon \]

Where;

BPEUCB: business per employee of UCBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

α: represents benchmark, which is average business per employee during the period of technology up-gradation.

β: difference in business per employee between benchmark and period of rapid usage of technology. β also represents the impact of ICT on business per employee of UCBs

ε: represents the error.

The results of the models are presented below;

\[ B_{PEUCB} = \alpha + \beta (D1) \]

\[ \Delta B_{PEUCB} = 3.500 + 0.200 (D1) \]

\[ t: \quad (25.733) \quad (1.040) \]

\[ \text{Sig:} \quad (0.000) \quad (0.329) \]

\[ F: 1.081 \quad \text{Sig:} \quad 0.329 \]
In the above model, F explains the total variability of the model and it is significant at the one percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable \(D_1\). Period of technology upgradation was considered as a benchmark and the average business per employee during the period of technology upgradation were 3.62. \(\beta_1\) explains the difference in business per employee between benchmark and periods of rapid usage of technology and the difference is 4.16. The difference is statistically significant at the one percent level. In the above model, F explains the total variability of the model and it is not significant at the five percent level. Accordingly, variability in the dependent variable is not significantly explained by the independent variable \(D_1\). Period of technology upgradation was considered as a benchmark and the average business per employee during the period of technology upgradation were 3.5. \(\beta_1\) explains the difference in business per employee between benchmark and periods of rapid usage of technology and the difference is 0.20. The difference is statistically not significant at the five percent level. Therefore, ICT has not made a significant impact on the growth of business per employee of UCBs but, ICT has made a significant impact on the growth of business per employee of CBs.

**Impact of ICT on Deposits per Branch of CBs and UCBs:**

Impact of ICT on deposits per branch of CBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

\[
DPBCB = \alpha + \beta (D1) + \varepsilon
\]

Where;

\(DPBCB\): deposits per branch of CBs,

\(D1\): 1 if period of rapid usage of technology, zero if period of technology up-gradation.

\(\alpha\): represents benchmark, which is average deposits per branch during the period of technology up-gradation.

\(\beta\): difference in deposits per branch between benchmark and period of rapid usage of technology. \(\beta\) also represents the impact of ICT on deposits per branch of CBs

\(\varepsilon\): represents the error.

The results of the models are presented below;
\[ \text{DPBCB} = \alpha + \beta \ (D1) \]
\[ \text{DPBCB} = 35.540 + 30.740 \ (D1) \]

\[ t: \ (9.688) \ (5.925) \]
\[ \text{Sig: } (0.000) \ (0.000) \]
\[ F: 35.106 \quad \text{Sig: } 0.000 \]

Impact of ICT on deposits per branch of UCBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

\[ \text{DPBUCB} = \alpha + \beta \ (D1) + \varepsilon \]

Where;

\( \text{DPBUCB} \): deposits per branch of UCBs,
\( D1 \): 1 if period of rapid usage of technology, zero if period of technology up-gradation.
\( \alpha \): represents benchmark, which is average deposits per branch during the period of technology up-gradation.
\( \beta \): difference in deposits per branch between benchmark and period of rapid usage of technology. \( \beta \) also represents the impact of ICT on deposits per branch of UCBs.
\( \varepsilon \): represents the error.

The results of the models are presented below;

\[ \text{DPBUCB} = \alpha + \beta \ (D1) \]
\[ \text{DPBUCB} = 12.300 + 0.240 \ (D1) \]

\[ t: \ (26.983) \ (0.372) \]
\[ \text{Sig: } (0.000) \ (0.719) \]
\[ F: 0.139 \quad \text{Sig: } 0.719 \]

In the above model, \( F \) explains the total variability of the model and it is significant at the one percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable \( D1 \). Period of technology up-gradation was considered as a benchmark and the average deposits per branch during the period of technology up-gradation were 35.54. \( \beta_1 \) explains the difference in deposits per branch between benchmark and periods of rapid usage of technology and the difference is 30.74. The difference is statistically significant at the one percent level. In the above model, \( F \) explains the total variability of the model and it is not significant at the five
percent level. Accordingly, variability in the dependent variable is not significantly explained by the independent variable D1. Period of technology up-gradation was considered as a benchmark and the average deposits per branch during the period of technology up-gradation were 12.3. $\beta_1$ explains the difference in deposits per branch between benchmark and periods of rapid usage of technology and the difference is 0.24. The difference is statistically not significant at the five percent level. Therefore, ICT has not made a significant impact on growth of deposits per branch of UCBs but ICT has made a significant impact on growth of deposits per branch of CBs.

**Impact of ICT on Advances per Branch of CBs and UCBs:**

Impact of ICT on advances per branch of CBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

$$\text{APBCB} = \alpha + \beta \times (D1) + \varepsilon$$

Where;

$\text{APBCB}$: advances per branch of CBs,

$D1$: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

$\alpha$: represents benchmark, which is average advances per branch during the period of technology up-gradation.

$\beta$: difference in advances per branch between benchmark and period of rapid usage of technology. $\beta$ also represents the impact of ICT on advances per branch of CBs.

$\varepsilon$: represents the error.

The results of the models are presented below;

$$\text{APBCB} = \alpha + \beta \times (D1)$$

$$\text{APBCB} = 22.920 + 40.600 \times (D1)$$

$t$: (4.547) (5.696)

$\text{Sig}$: (0.002) (0.000)

$F$: 32.444 $\text{Sig}$: 0.000
Impact of ICT on advances per branch of UCBs in India has been estimated with the help of a dummy variable regression model. The model is given by:

\[ \text{APBUCB} = \alpha + \beta (D1) + \varepsilon \]

Where:

- \text{APBUCB}: advances per branch of UCBs,
- \text{D1}: 1 if period of rapid usage of technology, zero if period of technology up-gradation.
- \alpha: represents benchmark, which is average advances per branch during the period of technology up-gradation.
- \beta: difference in advances per branch between benchmark and period of rapid usage of technology. \beta also represents the impact of ICT on advances per branch of UCBs.
- \varepsilon: represents the error.

The results of the models are presented below:

\[ \text{APBUCB} = 8.520 + 4.800 (D1) \]

\[
\begin{align*}
\text{t:} & \quad (10.028) \quad (3.995) \\
\text{Sig:} & \quad (0.000) \quad (0.004) \\
\text{F:} & \quad 0.008 \quad \text{Sig:} \quad 0.932
\end{align*}
\]

In the above model, F explains the total variability of the model and it is significant at the five percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable \text{D1}. Period of technology up-gradation was considered as a benchmark and the average advances per branch during the period of technology up-gradation were 22.92. \beta_1 explains the difference in advances per branch between benchmark and periods of rapid usage of technology and the difference is 40.60. The difference is statistically significant at the five percent level. In the above model, F explains the total variability of the model and it is significant at the five percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable \text{D1}. Period of technology up-gradation was considered as a
benchmark and the average advances per branch during the period of technology up-
gradation were 8.520. $\beta_1$ explains the difference in advances per branch between
benchmark and periods of rapid usage of technology and the difference is 4.8. The
difference is statistically significant at the five percent level. Therefore, ICT has made a
significant impact on growth of advances per branch of both CBs and UCBs India.

Impact of ICT on Business per Branch of CBs and UCBs:

Impact of ICT on business per branch of CBs in India has been estimated with the
help of a dummy variable regression model. The model is given by;

$$BPBCB = \alpha + \beta (D1) + \varepsilon$$

Where;

$BPBCB$: business per branch of CBs,

$D1$: 1 if period of rapid usage of technology, zero if period of technology up-
gradation.

$\alpha$: represents benchmark, which is average business per branch during the period of
technology up-gradation.

$\beta$: difference in business per branch between benchmark and period of rapid usage of
technology. $\beta$ also represents the impact of ICT on business per branch of CBs

$\varepsilon$: represents the error.

The results of the models are presented below;

$$BPBCB = \alpha + \beta (D1)$$

$$\hat{BPBCB} = 58.380 + 57.860 (D1)$$

$$t: \quad (8.274) \quad (5.798)$$

$$Sig: \quad (0.000) \quad (0.000)$$

$$F: 33.619 \quad Sig: 0.000$$

Impact of ICT on business per branch of UCBs in India has been estimated with the help
of a dummy variable regression model. The model is given by;
BPBU_{CB} = \alpha + \beta (D1) + \varepsilon

Where;

BPBU_{CB}: business per branch of UCBs,

D1: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

\alpha: represents benchmark, which is average business per branch during the period of technology up-gradation.

\beta: difference in business per branch between benchmark and period of rapid usage of technology. \beta also represents the impact of ICT on business per branch of UCBs

\varepsilon: represents the error.

The results of the models are presented below;

\begin{align*}
BPBU_{CB} &= \alpha + \beta (D1) \\
\land BPBU_{CB} &= 20.580 + 5.280 (D1)
\end{align*}

\begin{align*}
t: & \quad (17.742) \quad (3.219) \\
Sig: & \quad (0.000) \quad (0.012) \\
F: & \quad 10.360 \quad \text{Sig:} \quad 0.012
\end{align*}

In the above model, F explains the total variability of the model and it is significant at the five percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable D1. Period of technology up-gradation was considered as a benchmark and the average business per branch during the period of technology up-gradation were 58.38. \beta_1 explains the difference in business per branch between benchmark and periods of rapid usage of technology and the difference is 57.86. The difference is statistically significant at the five percent level. In the above model, F explains the total variability of the model and it is significant at the five percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable D1. Period of technology up-gradation was considered as a benchmark and the average business per branch during the period of technology up-gradation were 20.58. \beta_1 explains the difference in business per branch between
benchmark and periods of rapid usage of technology and the difference is 5.280. The difference is statistically significant at the five percent level. Therefore, ICT has made a significant impact on the growth of business per branch of both CBs and UCBs in India.

**ICT Impact on Profitability of Banks in India**

There is a positive correlation between ICT practices in a Banking environment and profitability. This proves that a change in the level of the investment marginally and ICT in the Banking industry will result in a proportionate increase in the profit level. The present study has made a sincere effort to analyze the role of ICT adoption and profitability of both commercial Banks and urban cooperative Banks of India

**Impact of ICT on Returns on Investment of CBs and UCBs:**

Impact of ICT on returns on investment of CBs in India has been estimated with the help of a dummy variable regression model. The model is given by;

\[
\text{ROI}_{CB} = \alpha + \beta \text{(D1)} + \epsilon
\]

Where;

\( \text{ROI}_{CB} \): returns on investment of CBs,

\( \text{D1} \): 1 if period of rapid usage of technology, zero if period of technology up-gradation.

\( \alpha \): represents benchmark, which is average returns on investment during the period of technology up-gradation.

\( \beta \): difference in returns on investment between benchmark and period of rapid usage of technology. \( \beta \) also represents the impact of ICT on returns on investment of CBs

\( \epsilon \): represents the error.

The results of the models are presented below;

\[
\text{ROI}_{CB} = \alpha + 58.880 \text{ (D1)} + 111.180 \text{ (D1)}
\]

\[
\text{t:} \quad (2.743) \quad (3.662)
\]

\[
\text{Sig:} \quad (0.025) \quad (0.006)
\]

\[
\text{F:} \quad 13.409 \quad \text{Sig:} \quad 0.006
\]
Impact of ICT on returns on investment of UCBs in India has been estimated with the help of a dummy variable regression model. The model is given by:

$$\text{ROI UCB} = \alpha + \beta (D1) + \varepsilon$$

Where;

ROI UCB: returns on investment of UCBs,

$D1$: 1 if period of rapid usage of technology, zero if period of technology up-gradation.

$\alpha$: represents benchmark, which is average returns on investment during the period of technology up-gradation.

$\beta$: difference in returns on investment between benchmark and period of rapid usage of technology. $\beta$ also represents the impact of ICT on returns on investment of UCBs

$\varepsilon$: represents the error.

The results of the models are presented below;

$$\text{ROI UCB} = \alpha + \beta (D1)$$

$\wedge \text{ROI UCB} = 0.860 + 1.740 (D1)$

$t$: $2.750$ $3.934$

$\text{Sig:} (0.025) (0.004)$

$\text{F:} 15.479$ $\text{Sig:} 0.004$

In the above model, F explains the total variability of the model and it is significant at the five percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable $D1$. Period of technology up-gradation was considered as a benchmark and the average returns on investment during the period of technology up-gradation were 58.88. $\beta_1$ explains the difference in returns on investment between benchmark and periods of rapid usage of technology and the difference is 111.180. The difference is statistically significant at the five percent level. In the above model, F explains the total variability of the model and it is significant at the five percent level. Accordingly, variability in the dependent variable is significantly explained by the independent variable $D1$. Period of technology up-gradation was considered as a benchmark and the average return on investment during the period of
technology up-gradation was 0.86. $\beta_1$ explains the difference in return on investment between benchmark and periods of rapid usage of technology and the difference is 1.74. The difference is statistically significant at the five percent level. Therefore, ICT has made a significant impact on growth of return on investment of both CBs and UCBs in India.

Banking sector being a backbone of the economy needs to be healthy and competitive. Well developed and technically equipped banking sector brings sustainable economic development. Highly productive and profitable bank is a prerequisite for economic prosperity.

Analyses have been done at the aggregate level for the study period of 10 years, i.e. from 2003 – 04 to 2012 – 13. Though ICT services were encouraged during the 90’s in the Indian Banking Sector the big step was taken to introduce E – Banking services at a maximum level only after the year 2002 – 03. Out of twelve parameters eight parameters such as impact of ICT on total deposits, total advances, total investment, total business, advances per employee, advances per branch, business per branch and return on investment has made significantly a positive effect on both Commercial Banks and UCBs in India. Because the impact of ICT has brought positive improvements in above mentioned eight parameters of UCBs. Period of technology up gradation and period of rapid usage of technology have shown positive picture in case of UCBs also. The study has analysed the impact of ICT on the performance of both Commercial Banks and UCBs. Though the technology is the most effective tool in Commercial Banks, UCBs are also influenced by this advanced tool. Therefore, out of twelve parameters eight parameters are positively influenced by ICT tools. ICT has a positive impact on performance and branch productivity of these UCBs. Therefore, to bring greater changes in performance, it is also suggested that some strategies need to be designed to improve the performance of UCBs with advanced technology tools. Greater emphasis should be given to strengthen the banking sector. Though eight parameters are showing positive impact in the case of both Commercial Banks and UCBs values of majority of parameters are positive only in Commercial Banks.
Section –C

Performance of Banking Sector in Karnataka

4.8 Introduction

According to the report of ‘Crisil inclusix Index’ (An index which measures the financial performance and inclusion in India) has given ninth place to Karnataka state. Mysore, Kodagu, Chikamangalur, Shimoga, Udipi, Dharwad and Hassan have taken top position in terms of financial inclusion. The RBI has recognized Raichur, Koppal, Bangalore rural, Bidar, Chamrajnagar and Gulbarga as under Banked districts in this state. During 1860’s presidency Banks opened their branches at Dharwad in 1863 and Bangalore in 1864. Gradually branches were opened in Belguam (1867), Hubli (1870) and Keemta (1873). These branches were opened to cater the needs of local traders in these areas.

4.9 Performance of Commercial Banks and UCBs in Karnataka

Karnataka is considered as the cradle of Banks in India. This state is a pioneer in starting up Banking business during the period between 1890 and 1949. Nearly 12 Banking companies were established. Bank of Mysore (1913) was later named as state Bank of Mysore.

Northern side of Karnataka achieved success in holding UCBs roots strong enough. UCBs are attracting deposits and advancing loans for house building, small scale industries, gold and other consumer loans. In 1908 the Bangalore Central Cooperative Bank was started to provide financial assistance to needy members.

The present study has made an attempt to compare the growth rate of deposits, advances and number of branches of both Commercial Banks and UCBs in India.

Trends in Deposits of Banks in Karnataka:

The deposits of Commercial Banks and UCBs in Karnataka are plotted on the graph in order to trace their movements. The following graph presents the trends in terms annual growth rate of deposits of CBs and UCBs in Kar
The above graph clearly presents the relative trends in deposits of CBs and UCBs in Karnataka. It has been found from the graph that annual growth of deposits of CBs were, in decreasing trend up to 2010-11 and the annual growth of deposits of UCBs were also in the same condition, but in the very next year it would increase due to the monetary policy of Karnataka government. Deposits of CBs have shown an increasing trend after 2010-11 and deposits of UCBs have also shown an increasing trend and UCBs performance has been improved after 2011-12. But the condition of CBs became worsen during the same period due to the poor recovery process and mixture of credit portfolio of branches of Commercial Banks in Karnataka In India, Karnataka has fifth place in having best UCBs. In the following section an attempt has been made to compare the growth of deposits of CBs and UCBs in Karnataka.

**Comparison of Deposits of Banks in Karnataka:**

The average growth of deposits of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests have been presented below;

<table>
<thead>
<tr>
<th>Banks</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error Mean</th>
<th>F</th>
<th>Sig</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBs</td>
<td>9</td>
<td>18.3218</td>
<td>1.77769</td>
<td>1.127</td>
<td>0.329</td>
<td>-0.305</td>
<td>0.771</td>
</tr>
<tr>
<td>UCBs</td>
<td>9</td>
<td>19.5251</td>
<td>3.52508</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.
Note: Not significant at five percent level.
The above table presents average growth rates of deposits of CBs and UCBs. The average growth of deposits for CBs in Karnataka is 18.32 and it is 19.53 for UCBs. It is found from the F test that the variance between the two is not significant. Therefore, equal variance is assumed. It is found from t-test that the mean difference between the two is not significant. Therefore, the performance of CBs is not significantly higher as compared to UCBs in terms of deposits.

**Trends in Advances of Banks in Karnataka:**

The advances of CBs and UCBs in Karnataka are plotted on the graph in order to trace their movements. The following graph presents the annual growth rate of trends in terms of advances of CBs and UCBs in Karnataka.

![Graph 4.23 Trends in Advances of Banks in Karnataka](image)

**Graph 4.23 Trends in Advances of Banks in Karnataka**

*In terms of growth in crore*

Source: *(Report On Trend And Progress Of Banking In India 2012-13)*

The above graph clearly presents the relative trends in advances of CBs and UCBs in Karnataka. It has been found from the graph that the advances of CBs were more compared to the advances of UCBs. Advances of CBs have shown increasing trend and advances of UCBs have shown decreasing trend, but after 2011-12 a little increase has taken place. During 2012-13 due to the importance given to priority sector lending in India by RBI, advances given by Commercial Banks increased in Karnataka but UCBs due to stagnation in the growth of branches total advances came down. In the following section, an attempt has been made to compare the growth of advances of CBs and UCBs in Karnataka.
Comparison of Advances of Banks in Karnataka:

The average growth of advances of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests are presented below.

**Table-no- 4.23 Comparison of Advances of Banks in Karnataka**

*(In terms of growth, rupees in crore)*

<table>
<thead>
<tr>
<th>Banks</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error Mean</th>
<th>F</th>
<th>Sig</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBs</td>
<td>4</td>
<td>15.4071</td>
<td>1.54715</td>
<td>0.212</td>
<td>0.661</td>
<td>-0.647</td>
<td>0.542</td>
</tr>
<tr>
<td>UCBs</td>
<td>4</td>
<td>16.6685</td>
<td>1.18580</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.
Note: Not significant at five percent level.

The above table presents average growth rates of advances of CBs and UCBs in Karnataka. The average growth of deposits for CBs in Karnataka is 15.41 and it is 16.67 for UCBs. It is found from the F test that the variance between the two is not significant. Therefore, equal variance assumed. It is found from t-test that the mean difference between the two is not significant. Therefore, the performance of CBs is not significantly differing from UCBs in terms of growth of advances. Accordingly, in Karnataka, performance of UCBs is not significantly high compared to CBs in terms of advances.

**Trends in Branches of Banks in Karnataka:**

The branches of CBs and UCBs in Karnataka is plotted on the graph in order to trace their movements. The following graph presents the trends in terms of branches of CBs and UCBs in Karnataka.
The above graph clearly presents the relative trends in the branches of CBs and UCBs in Karnataka. It has been found from the graph that branches of CBs were more compared to the branches of UCBs. Branches of CBs have shown increasing trend and branches of UCBs have shown a flat trend because the majority of UCBs are unit Banks so they could not expand their branches like Commercial Banks. During 2010-11 RBI took initiatives to increase the credit worthiness of permitted Banks to expand branches. There has been a branch expansion in semi-urban, urban and metropolitan areas of Commercial Banks. In the following section an attempt has been made to compare the growth of branches of CBs and UCBs in Karnataka.

Comparison of Branches of Banks in Karnataka:

The average growth of branches of Banks has been computed for and compared between CBs and UCBs with the help of independent sample t-test. The results of the tests are presented below;

<table>
<thead>
<tr>
<th>Banks</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error Mean</th>
<th>F</th>
<th>Sig</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBs</td>
<td>4</td>
<td>9.5881</td>
<td>3.74005</td>
<td>4.564</td>
<td>.077</td>
<td>3.235</td>
<td>.037</td>
</tr>
<tr>
<td>UCBs</td>
<td>4</td>
<td>1.0773</td>
<td>.71476</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed by Researcher.
Note: Significant at five percent level.
The above table presents average growth rates of branches of CBs and UCBs in Karnataka. The average growth of branches for CBs in Karnataka is 9.59 and it is 1.08 for UCBs. It is found from the F test that the variance between the two is not significant. Therefore, equal variance is assumed. It is found from t-test that the mean difference between the two is significant. Therefore, the performance of CBs significantly differs from UCBs in terms of growth of branches. Accordingly, in Karnataka, performance of CBs is significantly higher compared to UCBs in terms of branches.

At present there are 27 Public Sector Banks, 12 Foreign Banks, 20 Private Banks and 266 UCBs in Karnataka. Country's well developed Banks such as Syndicate Bank, Vijaya Bank, Karnataka Bank, Vysya Bank, State Bank of Mysore, Canara Bank and Corporation Bank took their birth in this state. All the Commercial Banks in this state have introduced well equipped E – Banking services and 18 UCBs have opened ATM services in their branches and 14 UCBs have gone through the Core Banking Solution. As per the information provided by State Level Bankers (SLBC) Committee, Bangalore, Direct Benefit Transfer (DBI) is implemented in Mysore, Tumkur and Dharwad districts recently. This scheme gives the most priority to ATM installation in all villages of these three district. Electronic Benefit transfer (EBT) scheme is recently implemented to enhance E – Banking services with the assistance of controlling offices of lead Banks and Technology services providers in Bangalore. At present only in few states on pilot basis. There were 8787 ATM centers in this state in 2012 – 13.

4.10 Summary

The technology revolution has developed more innovative products / services in the Banking sector. Banks are giving priority to the growing and changing needs of customers. They are giving much prominence to the convenience and preference of customers pertaining to technology based services. ICT has enabled customers to take information on financial services, to open accounts or to close accounts, to transact no need to visit Banks. They can operate their business activities at any place at any time. Banks have also understood financial needs of their customers and level of competitions in their business platform.

Building technological infrastructure in UCBs brings confidence and directs to explore to take a step forward to reap business opportunities UCBs have also realised the
power of technological solutions to reach out to new and existing customers particularly the youth accounts. It is noticed in the above analysis that parameters selected for the present study to analyse the impact of ICT shows that out of twelve parameters eight parameters such as impact of ICT on Total deposits, advances, investment, total business, advances per employee, advances per branch, business per branch and return on Investment have made a significant positive effect on both Commercial Banks and UCBs in India. Therefore, there is an urgent need of combining upgraded technology and human expertise to give highly customized services across the country. Core Banking Solution in UCBs is considered to be the key facilitator to meet the challenges of highly competitive Banking business. UCBs with CBS interline their branch network. In this background UCBs need to redraft their policies to develop their financial product / services.