CHAPTER VI

CONCLUSION

An analysis of distribution of branches of commercial banks in India has revealed the following points

**Growth of Bank branches in India**

- During the period of study branches of banks in India have grown by 25143 registering a CAGR of 3.20% and the overall growth rate stands at 37.01%. The pace of branch expansion during 2006-2011 (an increase of 21395 branches) is impressive vis-à-vis 2001-2006 (an increase of 2436 branches) in coincidence with the financial inclusion agenda of the Government.

- Population per Branch has declined by 2385 during the study period. An increase in population per Branch is noted (from 15083 to 16064) during 2001-2005 whereas in the post financial inclusion period of 2007-2011, it has declined by 3366.

**State-wise Distribution of Bank Branches in Northern Region**

- Among the seven states in the region, Punjab, the biggest state in terms of geographical area has opened the highest number of branches (1387), in absolute terms during the study period, followed by Rajasthan which has added 1144 branches.

- Chandigarh, the lone UT in the Region has opened the least number of branches numbering 133, followed by Jammu and Kashmir the trouble prone state which has opened 234 branches during the study period 2001-2011.
• In terms of CAGR of branches Delhi tops the list with a figure of 5.85% followed by Haryana (5.80%) and Chandigarh (5.15%).

• Himachal Pradesh (HP), Jammu & Kashmir (J&K), and Rajasthan are the laggards in terms of CAGR as their figures of 3.22%, 2.48% and 2.59% respectively are much below the average of the CAGR of branches in Northern Region as a whole identified at 4.19%.

• Though Punjab and Rajasthan are the front runners in branch expansion in absolute terms, their figures of CAGR are not quite impressive indicating that banks in those states failed to exhibit stability in their annual branch expansion plans.

• The pace of branch expansion has gained momentum during 2006-2011 (which may be christened as the post-financial inclusion era on a continuum basis, ensures scope for concurrent research on the efficacy of Financial Inclusion Programs/Plans-FIP) in all states of the region.

State-wise Distribution of Bank Branches in North Eastern Region

• During the study period, the CAGR of the North Eastern Region is at 2.17%, which is at a dismal range of expansion and the Reserve Bank of India in its recent Branch Authorization Policies has totally liberalized the opening of the branches as per the discretion of the banks. The Seven Sister States’ performance of this region ranges in between 0.49% Manipur and 3.06% of Nagaland. Five states are above the CAGR rate of 2.17% of the region. In absolute terms the highest number of branches (290) has been added by Assam and the least of 4 is by Manipur.
State- Wise Distribution of Bank Branches in Eastern Region

- The CAGR of the region is marginally below 2.50% and Sikkim tops the list with 5.85% and it is followed by a score of 3.11% by Jharkhand. In the other extreme it is Bihar and West Bengal with a score of 1.86% and 2.25% respectively. In total three states are above the regions’ score and the rest of two fall below it. During the study period in absolute terms the highest number of branches of 1139 has been added by West Bengal and the least (11) is scored by Andaman & Nicobar being the only one Union Territory in this region.

State-Wise Distribution of Bank Branches in Central Region

- The Central region is the tiniest region among others and the CAGR ticks at the rate of 2.89% as per Table 4.5. Uttarkhand, Chhattisgarh and Uttar Pradesh stand high with CAGR of 4.21%, 3.07%, and 2.92% respectively. Madhya Pradesh scores the lowest with 2.43%. Among the four, three states are above the score of the region as a whole and the remaining one is below the benchmark. In absolute terms being the bigger state, Uttar Pradesh records for the highest number of branches (2781) and the lowest is by Chhattisgarh.

State-wise Distribution of Bank Branches in Western Region

- During the study period the CAGR of Western Region is 3.13%. In this region Dadra & Nagar Haveli tops the list with 12.27%, which is almost four times higher than the growth rate of regional score. The next best is Daman & Diu with 4.81%. On the bottom side Gujarat has recorded a CAGR of 3.01%. Among the total of five states of the region four of them are above the CAGR of the region and rest is below the same. In absolute terms the highest number
of branches of 2380 has been added by Maharashtra, and the lowest by Union Territory Daman Diu (9).

**State-wise Distribution of Bank Branches in Southern Region**

- The CAGR of Southern Region is 3.44%. In this region Puducherry tops with a bank branch expansion score of CAGR of 6.34%. Andhra Pradesh is in second place with a CAGR of 3.78%. On the bottom side Lakshadweep comes first and Karnataka ranks second. Overall exactly fifty percent of the total states in the region are falling above the CAGR score of the region. In the study period the highest number of branches has been added by Andhra Pradesh (2384) and the lowest of three branches by Lakshadweep.

**Inter Region-Wise Distribution of Bank Branches**

- Among the regions, North Eastern regions records the lowest number of branches opened and Southern region tops the list of new branches added. Among the regions Southern region accounts for the highest number of branches of 26091 and Northeast records the lowest with 2396 branches. In terms of CAGR, in the post financial inclusion period North East does well.
- Overall the market share is high for southern region at 27% and lowest at 3% for North Eastern during the study period.

**Population-wise Distribution of Bank Branches in Northern Region**

- In the northern region, the highest number of branches is opened in metro centers(1905) and in rural centers the least number of branches( 420) have been opened. The same trend is visualized in terms of CAGR also.
Population-wise Distribution of Bank Branches in North-Eastern Region

- In North East region Semi urban branches have increased by 249 and urban branches have increased by 238. But number of rural branches has declined by 24.

Population-wise Distribution of Bank Branches in Eastern Region

- In the region the penetration of bank branches is more in urban centers in terms of CAGR (5.49%) and in absolute terms (1156), and the least in terms of both CAGR (0.39%) and absolute numbers (298) are in the rural centers. It can be inferred that the difference of expansion is minimal (53) between semi urban (1103) and urban centers (1156).

Population-wise Distribution of Bank Branches in Central Region

- Metropolitan centers scores first with a high CAGR of 9.69% and as usual the rural centers with a least CAGR of less than half percentage. Both semi urban and urban centers move closer to each other with 4.91% and 4.99% of CAGR, in terms of rolling out branches.
- In absolute terms the highest number of branches is opened by urban centers (1544) and the lowest is by rural centers(129).

Population-wise Distribution of Bank Branches in Western Region

- In this region metropolitan centers holds the highest CAGR of 5.16%. The lowest CAGR is represented by rural centers at 0.03%. Among the four centers except the rural centers all other centers are above the CAGR of the region with 4.33%, 3.95%, and 5.16% respectively in their order.
- In absolute terms the highest number of branches is opened in Metro centers (2049), because the region is dominated by the industrially highly thriving
states like Gujarat, Maharashtra and Goa. Next to metro centers comes the semi-urban centers with 1125 branches in increase. The net increase in rural centers is only 12 branches.

**Population-wise Distribution of Bank Branches in Southern Region**

- The southern region is progressive in adding branches in all population centers. The overall CAGR of the region is at 3.44%. The CAGR of the metro centers is the highest at 6.24% and it is followed by urban centers at 5.76%. The lowest CAGR among the population centers is scored by the rural centers with 0.26%.
- In absolute terms urban centers added more branches at 2750 and it is closely followed by semi-urban centers with 2693 branches. The least is by rural centers with 182 branches alone.

**Population-wise Net increase in the Distribution of Bank Branches of All Regions**

- The highest number of new branch added belong to the Semi Urban centers. In other words out of 25143 branches opened during the study period 32.63% falls in the category of semi urban centers. In contrast only 4.07%(1017) of branches have been opened in rural areas

**Bank Group-wise Distribution of Branches in Northern Region**

- In northern region, private sector banks, and that too new generation private sector banks are more aggressive in adding branches and it is revealed by the CAGR of 10.75%.
- The CAGR of the region as a whole bench marks at 3.64%.
• The CAGR of LABs, private sector banks, foreign banks and nationalized banks are above the regional score of 3.64% with 27.10%, 10.75%, 5.29% and 4.08% respectively. SBI group (3.45%) and RRBs (0.28%) are below the regional benchmark. RRBs CAGR is at a very dismal space to be focused immediately.

• In absolute terms nationalized banks (2716) opened the highest number of branches in the northern region, the second next higher number of expansion (1006) is done by SBI. The lowest number of addition is done by LABs by 20 in actual numbers.

Bank Group-wise Distribution of Branches in North-Eastern Region

• Private sector banks have shown a CAGR of 34.06% which is a tremendous growth compared to the region as a whole with a benchmark CAGR of 1.14%.

• In absolute terms, over the past decade it added only 463 branches, among these the major additions are from nationalized banks (185) and private banks (142). A meager number of 32 branches have been added by RRBs over the study period.

Bank Group-wise Distribution of Bank Branches in Eastern Region

• Private banks have been a major contributor with a CAGR of 22.38% which is well ahead of the bench mark CAGR of the eastern region at 2.11%. RRBs have shown a dismal figure of not even a CAGR of half a percentage.

• In absolute terms nationalized banks have done a commendable performance by adding 1706 branches, and it is followed by private banks (706) and SBI & Associates (701). LAB is non existent in this region.
Bank group-wise Distribution of Bank Branches in Central Region

- During the study period the central region has set a bench mark CAGR of 2.56%, which is far below the CAGR of foreign banks (28.21%), privates banks (15.88%). Among the six category of banks except RRBs (0.72%) rest of the bank types are all above the bench mark CAGR. LABs are nonexistent in this region.

- During the study period in absolute terms the highest branch expansion has been done by nationalized banks (2383) and it is followed by SBI and Associates. An iota of addition is done by RRBs with 341 branches.

Bank Group-wise Distribution of Bank Branches in Western Region

- The pace of branch expansion in western region with a bench mark CAGR of 2.70%. Private banks have expanded more branches at the rate of 9.25% of CAGR. It is followed by foreign banks at a CAGR of 3.64%. RRBs (0.47%) and nationalized banks (2.27%) are below the benchmark CAGR of the region as a whole and rest of them are above the same.

- In absolute terms the more number of branches (1689) has been added by nationalized banks and least (1) is by LABs. Overall the region has added 3868 branches.

Bank Group-wise Distribution of Branches in Southern Region

- The number of bank branches has been added by the southern region as a whole in terms of CAGR of 3.15% and absolute numbers (7487). Among the region LAB’s CAGR is high with 11.61% and it is followed by foreign banks (5.29%) and private banks (5.06%). Except RRBs all other category of banks are above the bench mark CAGR of the region.
• In absolute terms the highest number of branches has been added by SBI and Associates (3287) and it is followed by private banks (2034). The least number of branches has been added by LABs (18) and foreign banks (29). RRBs have expanded by rolling out 556 branches in the rural areas in the study period.

State-wise Distribution of branches of SBI Group

• Lakshadweep is leading with the highest CAGR of 14.87% with regard to state-wise distribution of bank offices of SBI and Associates during the study period (2001-2011). Out of 35 States and Union Territories, 13 are above the all India average of 3.27% and the remaining 22 States and Union Territories have CAGR less than the national average.

State-wise Distribution of Branches of Nationalized Banks

• It is understood that CAGR of State-wise distribution of nationalized bank offices is highest in Mizoram (17.46%) followed by Arunachal Pradesh (11.61%) and Dadra Nagar Haveli (9.04%).

• The all India CAGR of state-wise distribution of nationalized bank offices is just 3.06%, and twenty two States and union territories have CAGR above the national average and thirteen have less than the national average CAGR.

State-wise Distribution of Branches of Private Banks

• The all India CAGR of state-wise distribution of private bank offices is just 8.37%. The performance of twenty five states is above the all India CAGR, whereas nine states and union territories are below. Tripura ranks top with
CAGR of 61.54%, followed by Mizoram (49.53%), Arunachal Pradesh (49.53%) and Manipur (41.42%).

**State-wise Distribution of Branches of Foreign Banks**
- 13 states have no presence of foreign banks and in States such as Jammu Kashmir (-100%), Himachal Pradesh (-100%), Uttarakhand (-20.63%) and West Bengal (-0.28%) the CAGR of state-wise distribution of foreign bank offices is negative.

**State-wise Distribution of Branches of Regional Rural Banks**
- The all-India CAGR of state-wise distribution of RRBs is just 0.77%. Puducherry has an exorbitant CAGR of 53.74%, which is followed by the states such as Haryana (3.49%), Tamilnadu (3.33%), Tripura (2.68%) and Kerala (2.56%).

**State-wise Distribution of Bank Offices of Local Area Banks**
- The LABs have limited presence across Indian states and union territories. However, the all-India CAGR of state-wise distribution of LABs is 14.24%. The states such as Punjab, Karnataka, Maharashtra, and Andhra Pradesh have a positive CAGR of 36.22%, 29.15%, 10.41% and 6.57% respectively.

**Population-wise Distribution of Branches of SBI Group**
- The population-wise distribution of SBI and Associate Bank offices shows that CAGR of bank offices in metro is so attractive with 6.01%, followed by Urban (5.21%) and Semi-Urban (3.25%) during the study period. However, the CAGR of bank offices in rural area is not encouraging and it is just 1.19%. 

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Population-wise Distribution of Branches of Nationalized Banks

- The population-wise distribution of nationalized bank offices depicts that the CAGR in metro (5.31%), urban (4.31%) and semi-urban (4.30%) are above the all-India CAGR of 3.04%. However, the CAGR in rural area is just 0.25%.

Population-wise Distribution of Branches of Private Sector Banks

- The all-India CAGR of private bank offices is 8.35%, which is greater than the other bank groups such as SBI & associates (3.27%), nationalized banks (3.04%), foreign banks (4.52%) and Regional Rural Banks (0.88%). The CAGR of private bank offices in metro is the highest with 11.11%, followed by urban (10.15%) and semi-urban (8.20%). However, the CAGR in rural area is just 1.43% which reveals the poor private bank expansion in rural areas.

Population-wise Distribution of Branches of Foreign Banks

- The all-India CAGR of foreign bank offices is 4.52%. The CAGR of foreign bank offices in rural area is the highest with 32.29% followed by semi-urban area with 14.87%.

Population-wise Distribution of Branches of Regional Rural Banks

- The all-India CAGR of distribution of RRBs was 0.88% during the study period. The CAGR of RRB offices in metro is the highest (20.72%) and the lowest is in rural (-0.19%).

Population-wise Distribution of branches of Local Area Banks

- The all-India CAGR of distribution of LABs is 14.24%. The distribution of LABs across rural and semi-urban areas is encouraging with the CAGR of 18.67% and 17.46% respectively. However, the CAGR of urban LABs is just 4.52%.
Region-Wise Distribution of Branches of SBI Group

- The region-wise distribution of SBI & associate bank branches shows that the CAGR of northern (3.45%), southern (3.44%), central (3.40%), and western (3.36%) regions are above the all-India CAGR of 3.27%. However, the eastern region (2.74%) and north-eastern region (2.06%) are below the all-India CAGR.

Region-wise Distribution of branches of Nationalized Banks

- The region-wise distribution of nationalized bank branches exhibits that the northern region tops with the CAGR of 4.08%, followed by southern region (3.27%), central (3.21%), eastern (2.55%), western (2.27%) and north-east (2.09%).

Region-wise Distribution of branches of Private Bank Branches

- The region-wise distribution of private bank branches confirm that the north-eastern region has showed tremendous growth during the study period with 34.06% CAGR, followed by eastern region (22.38%) and central (15.88%).

Region-wise Distribution of branches of Foreign Banks

- The all-India CAGR of distribution of foreign bank branches was just 4.67%. It also reveals that the central region has got the highest CAGR of 28.21%, which is incomparable with other regions. The north-eastern (7.18%), northern (5.29%) and southern (5.29%) regions are above the all-India CAGR.

Region-wise Distribution of branches of Regional Rural Banks

- Of the six regions, only southern region has the CAGR of distribution RRBs (1.81%) above the all-India average of 0.77%. The northern region has witnessed the lowest CAGR during the study period with just 0.28%. 

Region-wise Distribution of branches of Local Area Banks

- The all-India CAGR of distribution of LABs during 2001-11 is 14.24%. The northern region has got the highest CAGR of 27.10% followed by Southern region with 11.61%.

State-wise Distribution of Rural Branches

- The all-India CAGR of rural bank offices is 0.31%, which is not an encouraging phenomenon. However, the Union Territories such as Chandigarh, Dadra Nagar Haveli and Daman & Diu have shown rural bank offices CAGR of 10.31%, 7.18% & 7.18% respectively during the study period.

State-wise Distribution of Semi-Urban Branches

- The all-India CAGR of semi-urban bank offices is 4.50%. 24 States and Union territories have CAGR are above the all-India CAGR and 11 states and union territories have CAGR less than the all-India CAGR. Chandigarh has the highest CAGR of 20.57% during the study period and West Bengal has the lowest CAGR of 2.40%.

State-wise Distribution of Urban Branches

- The distribution of urban bank offices is witnessed only in 26 of 35 states and union territories. The all-India CAGR of urban bank offices is 5.52% during the study period. 15 states and union territories are above the all-India CAGR and 11 are below the all-India CAGR. Surprisingly, Mizoram has the highest CAGR during the study period with 11.98%. Manipur has the lowest CAGR with 1.55%.
State-wise Distribution of Branches in Metro Centers

- There are 11 states and 1 union territory which have metro branches. The all-India CAGR of metro branches is 6.37% during 2001-2011. The metro branches growth is tremendous in Uttar Pradesh with 11.80% CAGR followed by Punjab with CAGR of 10.58%. West Bengal and Tamilnadu have showed the least CAGR in this regard with 3.01% and 4.20% respectively.

State wise/Union Territory wise Distribution of Branches of All Banks

- The state-wise/union territory wise distribution of total bank offices across the country shows that the all-India CAGR of total bank offices is 3.20%. The interesting aspect is that there are only 14 states and union territories which have their CAGR above the all-India CAGR and 21 states and union territories have CAGR less than all-India CAGR.

Region-wise Distribution of Rural Branches

- The region-wise distribution of bank offices in rural area shows that the northern region has the highest CAGR of 0.81%, followed by Eastern region (0.39%). The western region’s performance with regard to rural branches is not satisfactory since the CAGR is just 0.03% during 2001 – 2011.

Region-wise Distribution of Semi-Urban Branches

- The all-India CAGR of semi-urban bank offices is just 4.50% during the study period. Of six regions, four regions (north, north-east, east and central) have CAGR above the all-India CAGR and two regions (western and southern) have CAGR below the all-India CAGR.
Region-wise Distribution of Urban branches

- The north (6.67%), north-east (6.18%), east (5.49%) and southern (5.76%) regions are above the all-India CAGR of urban bank offices.

Region-wise Distribution of Metro Branches

- The all-India CAGR of metro bank offices is 6.37% during the study period, and Central region ranks first with the CAGR of 9.69%, followed by north (7.14%) and southern region (6.24%).

Bank Group-wise Distribution of Rural Branches

- Among the various bank groups, foreign banks have showed tremendous growth in rural area with the CAGR of 32.29%, followed by LABs with 18.67%. There is a negative CAGR for RRBs and nationalized banks have achieved just 0.25% CAGR for the entire study period of 2001 – 2011.

Bank Group-wise Distribution of Semi-Urban branches

- LABs have the notable growth during the study period with regard to semi-urban branches with the CAGR of 17.46%. This is followed by foreign banks with the CAGR of 14.87% and private banks with 8.20%. SBI and its associate banks have registered the lowest CAGR during the study period with just 3.25%.

Bank Group-wise Distribution of Urban branches

- The foreign banks and private banks have shown tremendous growth in urban bank offices during the study period with the CAGR of 14.51% and 10.15% respectively. The nationalized banks have the least CAGR of 4.31%.
Bank Group-wise Distribution of Metro Branches

- The all-India CAGR of metro offices is 6.37%. The CAGR of RRBs is the highest (20.72%) among all the bank groups, followed by private sector with 11.11%. LABs have no presence in metro area and the foreign banks have too shown a meager CAGR of 2.61%.

State-wise Distribution of Bank Branches in Regions - Pre & Post Financial Inclusion Phases

- The state-wise distribution of bank branches in different regions with the comparison of CAGR during pre-financial inclusion phase (2001-05) and post-financial inclusion phase (2006-11) shows that the northern region CAGR during 2001-05 was just 1.67%, and it has increased to 5.36% during 2006-11. Rajasthan and Himachal Pradesh have witnessed great hype in the CAGR between the pre and post financial inclusion phases.

- The north-east region has showed tremendous growth during the post-financial inclusion phase with the CAGR of 3.39% whereas it’s CAGR during the pre-financial inclusion phase was just 0.14%.

- The eastern region has also witnessed a significant CAGR growth during post-financial inclusion phase (3.65%) when compared to pre-financial inclusion phase (0.53%).

- The central region’s CAGR during 2001-05 was 0.50% and during 2006-11 it was 4.54%.

- The western region has improved its CAGR from 0.62% during 2001-05 to 4.76% during 2006-11.
During 2001-05, the CAGR of the Southern region was 1.16% and in 2006-11 it has increased to 4.76%.

Bank Group-wise Distribution of Bank Branches in Regions - Pre & Post Financial Inclusion Phases

- The Bank Group-wise Distribution of Bank Branches across different regions with the comparison of CAGR between the pre and post financial inclusion phases depicts that in almost all the regions and in all the bank groups the CAGR during the post-financial inclusion phase is much higher than the pre-financial inclusion phase. However there are certain exceptions. For instance, the foreign banks’ CAGR during the post-financial inclusion phase is lesser than the pre-financial inclusion phase in northern, eastern, central and southern regions.

Population-wise Distribution of Bank Branches in Different Regions - Pre & Post Financial Inclusion Phases

- The CAGR of rural branches is negative during 2001-05, however during 2006-11 (post-financial Inclusion phase) the CAGR of rural branch distribution has turned positive in all the regions. This means that the post-financial inclusion phase has really witnessed tremendous growth in the CAGR in all regions and in all areas, viz, rural, semi-urban, urban and metro. However, the metro branches in eastern and central region have shown a negative performance between the pre and post financial inclusion phases.
Bank Group-wise Distribution of Bank Branches and ATMs

- An intra channel comparison between ATMs and branches of public sector banks shows that the CAGR of ATMs is 31.45% to 5.39% of bank branches, which can be interpreted as an alternative channel for banking services can be made use extensively. From the figures of ATMs of foreign banks at the rate 18.74% of CAGR shows their aggressiveness in exploiting the same as there are regulatory restrictions in opening of branches. The comparison of CAGR of ATMs (28.88%) versus branches (6.30%) shows that the focal point of banks is to reach the general masses through cost effective alternative business decision models through ICT.

Bank Group-wise Distribution of On-Site and Off-Site ATMs

- Proportion of ATMs to Branches has registered a significant raise in all Bank groups. In Public sector banks proportion of ATMs to branches has increased from 26.35% to 79.5%. In case of Private sector it has increased from 117.54% to 203.9%. In foreign bank the figure has risen to 431.2% from 339.77%. Table 4.56 gives relevant data.

- In case of Public sector Banks the share of Onsite ATMs is always more than that of off site ATMs. In contrast in case of private sector banks and foreign banks off site ATMs are dominant as distribution channels.

Number of Bank Branches opened at Unbanked Centers

- The percentage share of unbanked centers to total branches opened was not encouraging even though there was some marginal increase in the share since 2001, but followed by inconsistency. The percentage of unbanked centers opened to total branches ranges in between 0.15 percent to 5.83 percent. Even though in 2005-2006 the concepts of inclusive growth and in furtherance the
coinage of financial inclusion has taken place but the repercussions are yet to set a bench mark and abysmally accounted for 0.15 percent in 2006.

**Number of Bank Branches Opened or Closed/Merged/Converted**

- The overall expansion of branches during the study period in terms average number is 2444 and the other way round for the closed/merged/converted figure is 207. The ratio of closed to open stands at 8.46%. In terms of CAGR the number of branches is opened at the pace of 24.12% per annum. The closure is at the rate of -14.62%. The closed to open ratio for public sector, private sector, RRB, foreign and LAB stands at 6.46%, 11.07%, 18.18%, 60%, and 25% respectively. The negative CAGR is encountered for foreign banks (-1.99%) and local area banks (-7.58%) due to net decrease in addition of bank branches. The highest number of average addition (1577) is done by public sector banks and least is by LABs (4).

**Hypotheses Testing**

- **Hypothesis 1:** State-wise distribution of bank branches has significant difference across the regions.

In connection with the hypothesis 1, the F-test on table 4.3, shows the state-wise distribution of bank branches has significant difference across the region viz., Northern, North Eastern, Eastern, Central, Western and Southern Region (F-value = 168.624, p<0.01).

- **Hypothesis 2:** Population-wise distribution of bank branches has significant difference across the regions.

In connection with the hypothesis 2, the F-test on table 4.7, shows the population-wise distribution of bank branches has significant difference
across the region viz., Northern, North Eastern, Eastern, Central, Western and Southern Region (F-value = 153.169, p<0.01).

- **Hypothesis 3**: Bank group-wise distribution of bank branches has significant difference across the regions.

  In connection with the hypothesis 3, the F-test on table 4.11, shows the bank group-wise distribution of bank branches has significant difference across the region viz., Northern, North Eastern, Eastern, Central, Western and Southern Region (F-value = 153.74, p<0.01).

- **Hypothesis 4**: State-wise distribution of bank branches has significant difference across the bank type.

  In connection with the hypothesis 4, the F-test on table 4.15, shows the bank group-wise distribution of bank branches has significant difference across the type of banks viz., SBI & Associates, Nationalized, Private, Foreign, Regional Rural Banks and Local Area Banks (F-value = 488.00, p<0.01).

- **Hypothesis 5**: Population-wise distribution of bank branches has significant difference across the bank type.

  In connection with the hypothesis 5, the F-test on table 4.19, shows the bank group-wise distribution of bank branches has significant difference across the type of banks viz., SBI & Associates, Nationalized, Private, Foreign, Regional Rural Banks and Local Area Banks (F-value = 506.23, p<0.01).

- **Hypothesis 6**: State-wise distribution of bank branches has significant difference across the location.

  In connection with the hypothesis 6, the F-test on table 4.23, shows the state-wise distribution of bank branches has significant difference across the locations viz., rural, semi-urban, urban and metro (F-value = 133.52, p<0.01).
• **Hypothesis 7**: Bank group-wise distribution of bank branches has significant difference across the location.

In connection with the hypothesis 7, the F-test on table 4.27, shows the bank group-wise distribution of bank branches has significant difference across the locations viz., rural, semi-urban, urban and metro (F-value = 7.36, p<0.01).

• **Hypothesis 8**: Region-wise distribution of bank branches has significant difference across the location.

In connection with the hypothesis 8, the F-test on table 4.31, shows the region-wise distribution of bank branches has significant difference across the locations viz., rural, semi-urban, urban and metro (F-value = 2.65, p<0.05).

**Region-Wise Population per Branch from 2001 to 2011**

• The region-wise population per office from the year 2001 to 2011 shows that the region-wise highest mean population per office in the North-Eastern region (21382.46) followed by Central region (19427.85), Eastern region (18991.82), Western region (13848.61), Southern region (11858.87) and Northern region (11829.82).

• The Coefficient of Variation among the regions reveals that the population for the Eastern region during the period from 2001 to 2011 [C.V. =3.22] is more consistent with the other regions.

**Region-Wise GDP per Office**

• The region-wise GDP per office from the year 2001 to 2011 shows that the region-wise highest mean population per office in the Western region (52.29) followed by Northern region (50.31), Southern region (44.81), North-Eastern region (42.79), Eastern region (40.30) and in Central region (37.67).
• The Coefficient of Variation among the regions reveals that the GDP per office for the Southern region during the period from 2001 to 2011 [C.V. =34.66] is more consistent with the other regions.

Region-Wise Area per Office

• The region-wise Area per office (in square Km.) from the year 2001 to 2011 shows that the region-wise highest mean Area per office in the Northern region (302.74) followed by Eastern region (85.74), Central region (70.32), North-Eastern region (63.56), Western region (27.82) and in Southern region (20.58).

• The Coefficient of Variation among the regions reveals that the Area per office(in square Km) for the Northern region during the period from 2001 to 2011 [C.V. =7.57] is more consistent with the other regions.

Region-Wise Deposits per Office

• The region-wise Deposits per office (Rs. in lakhs) from the year 2001 to 2011 shows that the region-wise highest mean Deposits per office in the Western region (6641.29) followed by Northern region (4578.73), Southern region (2703.90), Eastern region (2311.23), North-Eastern region (2048.33) and in Central region (2029.20).

• The Coefficient of Variation among the regions reveals that the Deposits per office (Rs. In lakhs) for the Central region during the period from 2001 to 2011 [C.V. =42.02] is more consistent with the other regions.

Region-Wise Credits per Office

• The region-wise Credits per office (Rs. in lakhs) from the year 2001 to 2011 shows that the region-wise highest mean Credits per office in the Western region (6641.29) followed by Western region (6641.29), Southern region (2703.90), Eastern region (2311.23), North-Eastern region (2048.33) and in Central region (2029.20).
region (5521.87) followed by Northern region (3142.16), Southern region (2271.21), Eastern region (1109.85), Central region (881.60) and in North-Eastern region (709.27).

- The Coefficient of Variation among the regions reveals that the Credits per office (Rs. In lakhs) for the Northern region during the period from 2001 to 2011 [C.V. =52.46] is more consistent with the other regions.

State-Wise Area per Office

- The State-wise area per office from the year 2001 to 2011 shows that the state-wise highest mean area per office in the Arunachal Pradesh (1152.09) followed by Manipur (282.64), Mizoram (244.91), Jammu & Kashmir (241.18), Andaman and Nicobar (238.18) Nagaland (212.09) and so on.

- The Coefficient of Variation among the states reveals that the area per office for the Manipur state during the period from 2001 to 2011 [C.V. = 2.83] is more consistent with the other states.

State-wise Credit per office

- The State-wise credit per office from the year 2001 to 2011 shows that the state-wise highest mean credit per office in the Delhi (12041.50) followed by Chandigarh (9086.18), Maharashtra (7918.63), Tamilnadu (3145.05), Karnataka (2196.66) Andhra Pradesh (2078.41) and so on.

- The Coefficient of Variation among the states reveals that the credit per office for the Jammu & Kashmir state during the period from 2001 to 2011 [C.V. = 41.40] is more consistent with the other states.
State-Wise Deposits per Office

- The State-wise Deposits per office from the year 2001 to 2011 shows that the state-wise highest mean deposit per office in the Delhi (16599.95) followed by Maharashtra (8812.16), Chandigarh (8262.83), Daman & Diu (5189.38), Puducherry (3554.55) and Dadra & Nagar Haveli (3001.68).
- The Coefficient of Variation among the states reveals that the deposit per office for the Dadra & Nagar Haveli state during the period from 2001 to 2011 [C.V. = 17.01] is more consistent with the other states.

State-wise GDP Per Office

- The State-wise GDP per office from the year 2001 to 2011 shows that the state-wise highest mean GDP per office in the Nagaland (75.90) followed by Maharashtra (67.84), Manipur (67.39), Puducherry (63.85), Haryana (61.25), Andaman & Nicobar (60.39) and so on.
- The Coefficient of Variation among the states reveals that the GDP per office for the Puducherry state during the period from 2001 to 2011 [C.V. = 25.26] is more consistent with the other states.

State-wise Population Per Office

- The State-wise Population per office from the year 2001 to 2011 shows that the state-wise highest mean population per office in the Manipur (35177.90) followed by Bihar (28541.86), Nagaland (26363.29), Madhya Pradesh (22677.16), Assam (22013.59) and Uttar Pradesh (21706.80).
- The Coefficient of Variation among the states reveals that the population per office for the Rajasthan state during the period from 2001 to 2011 [C.V. = 3.47] is more consistent with the other states.
From the following findings one could understand that

- Public sector banks are dominant in branch banking.
- North eastern region offers wider scope for new branches.
- Banks have not yet accelerated the pace of branch expansion in rural centers.
- ATMs are emerging as popular channel of distribution.

In the above backdrop the researchers places few guidelines for developing a viable model for ensures comprehensive financial inclusion.

The future of democratic polity and social harmony of India rests on the premise of inclusive growth. Financial inclusion is a crucial driver for such growth. The political leadership is looking at the banking industry to deliver on this promise over the next few years. Already, additional competition is planned in the form of new licenses for private sector banks in the hope that this will lead to innovative business models for inclusive banking. This expectation will strengthen. Delay in solving the issue could lead to the banking revenue pool being opened up to non-banks to find more creative answers.

Many studies and reports have highlighted the issue of financial exclusion. Based on research conducted by The Boston Consulting Group in 2006, 144 million households are financially excluded. As per the 2008 Report on Financial Inclusion by Dr. C. Rangarajan, over 73 percent of farmer households currently do not have access to formal sources of credit. In certain geographies this ratio is much worse.

Various experiments by banks and non-banks have served to highlight the broad contours of the potential solution. The philosophical framework to fight financial exclusion has undergone a significant shift from an “obligation” perspective
to an “opportunity” perspective. It is also well established that a downgraded conventional banking model is not the answer. The current business model of a commercial bank has a cost structure that is economically unviable for rural markets. During the last decade, the total number of rural branches of commercial banks dropped by 1.2 percent (as shown in Exhibit 2b), whereas, co–operative banks and MFI demonstrate elements of business models that are economically viable for small ticket lending. The stunted growth of co–operative banks reflects the weakness in their governance framework, capability deficits, and poor financial strength. This is being rectified under the Vaidyanathan Committee (VC1) implementation. The MFI industry has been growing at a scorching pace of over 50 percent. This could create trouble with bad debts. Never the less, the phenomenal growth of MFI segment does reflect the huge unmet demand and the suitability of some elements of the MFI business model for that demand. Banks should adopt some key elements of the MFI model as they design a viable model to serve the financially excluded.

A business model starting from a clean slate

The business model to profitably serve excluded customers will be significantly different from a conventional bank model. It needs to be created from a clean slate to prevent existing models from influencing the design. Also the model will need to be ring–fenced for it to stay true to the underlying business imperatives.

First, not all excluded customers can be served profitably. Research by The Boston Consulting Group in 2006 found that a large segment of customers just above the bottom of the pyramid are excluded from formal financial services. They could be profitably served with an innovative low cost business model. This segment, with annual household incomes in the range of Rs 60,000–180,000 is termed “The Next
Billion” segment. The business models to serve customers at the bottom of the pyramid will require state subsidies and support.

**Exhibit 1:** “No Frilling” of conventional models not sufficient – Banks need to create a business model from a clean slate

<table>
<thead>
<tr>
<th>Economic realities</th>
<th>Business model imperatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low ticket size</td>
<td>Entirely new model</td>
</tr>
<tr>
<td>· Transaction costs to be lowered by</td>
<td>· Smaller, lower cost branches; low cost technology; local low cost human resource</td>
</tr>
<tr>
<td>over 90 percent</td>
<td>· Leverage shared infrastructure (e.g., shared hosted CBS, UID to reduce KYC cost)</td>
</tr>
<tr>
<td>High cost in last mile</td>
<td>Variable cost model for last mile</td>
</tr>
<tr>
<td>· High geographic dispersion of</td>
<td>· Channel costs linked to transactions / business volume</td>
</tr>
<tr>
<td>customers</td>
<td>· Tie up with other businesses who have an existing viable distribution network</td>
</tr>
<tr>
<td>High risks; no credible collateral</td>
<td>· Leverage ICT based last mile solutions to reduce costs, risks</td>
</tr>
<tr>
<td>Low float</td>
<td>Rely on JLG / SMS to begin with</td>
</tr>
<tr>
<td>· Build credit history quickly</td>
<td>Transaction fee based business models</td>
</tr>
<tr>
<td>Unique customer traits</td>
<td>Unique business processes / product design</td>
</tr>
<tr>
<td>· Low financial literacy / discipline</td>
<td>· Door step collections</td>
</tr>
<tr>
<td>· Unpredictable / cyclical cash flows</td>
<td>· Products designed for rural segments (e.g., farmer’s vs fisher man’s cash flow)</td>
</tr>
<tr>
<td>· Need for all financial services at</td>
<td>· Integrate the credit and deposit models into one single window for customer</td>
</tr>
<tr>
<td>one place</td>
<td>· Offer insurance, remittances through the same window</td>
</tr>
<tr>
<td>Defunct local economic eco- systems</td>
<td>Customer education as an integral activity in business model</td>
</tr>
<tr>
<td>and gaps in business value chains</td>
<td>Support local economic drivers to spur local livelihood generation</td>
</tr>
<tr>
<td></td>
<td>· Fund economically viable value chain segments</td>
</tr>
</tbody>
</table>

Exhibit 1 depicts the imperatives for this new business model. Transaction costs must be reduced by as much as 90 percent to achieve a sufficiently low break-even to accommodate the low ticket sizes. Such dramatically lower costs require the entire business model to be created bottom up from scratch with different technology, local low cost manpower, much smaller branches, simple product portfolio and processes. Shared infrastructure has to be leveraged wherever possible. In its report on the use of mobile phones for financial inclusion, the Inter–Ministerial Group has envisaged a shared account hosting infrastructure to reduce the cost of technology for very small balance accounts. UIDAI infrastructure would reduce KYC costs in new customer acquisition.
The second challenge is reducing the last mile cost, which is very high due to significant geographic dispersion of customers. Technology now allows online BC models that enable real time transactions at very low costs as illustrated in Exhibit 2. An ICT enabled online BC allows for rich customer interaction at one-tenth the transaction cost of a typical branch. “For Profit” Corporate BC is under active consideration of the regulator. Such a partner who already has a viable distribution network in rural areas could help create a very low cost BC model at marginal cost.

The third challenge pertains to credit. Credit is by far the most sought after product and also the most profitable. However, there is typically no collateral to support securitized lending. The business has to start with using the JLG / SHG approach while in parallel developing the credit history of individuals such that promising entrepreneurs could be supported with higher volumes of credit over time.

The fourth relates to with pricing. Typically banks earn revenues on transaction products with a float income. However in this segment, floats are very low so the business model will need to be based on transaction charges. Fortunately, there is a widespread acknowledgement that prices should be remunerative. The pricing scheme has to be designed in a manner that customers perceive as fair.

Product and process design will also need to be different from the traditional mass market banking practice. For example, successful rural banking businesses have found that sending collection staff door-to-door with hand-held online devices is particularly effective. Rural households are segmented in terms of their cash flow profile. “Farmers” have high risk cyclical incomes. “Fishermen” have daily volatile incomes. Products need to be designed to suit customer’s different cash flow
profiles. Rural households value access to all financial products and advise under one roof. Banks need to co-locate the credit and deposit businesses within the same channel to meet the needs of these customers.

The final imperative is the most crucial one. In this segment, steps to achieve financial literacy are an integral part of the business plan. This is in the best interest of the bank, as well as the customer. Further, the bank’s business model needs to acknowledge that the long term viability of the business depends upon economic improvements in the ecosystem of the customers to ensure that their livelihoods are sustainable. As such, the bank’s business plan needs to go beyond the products and services to the customers and support/finance local economic drivers and agricultural value chains.

**Exhibit 2**: Technology is allowing sufficient Lowering of transaction costs while maintaining the quality of interface.
Exhibit 3: Approaches for viable financial inclusion models – Need to Ring-Fence Financial Inclusion business

We are at the cusp of the evolution of viable business models for “The Next Billion” customers in the banking industry. Different pieces of the puzzles are coming together through a variety of experiments and pilots at different places. The task is to pull it all together into a consistent, viable business model for the banks. Given that the business model for this segment will be substantially different from that of a traditional bank, it will be crucial to ring-fence this business. The banking industry should draw learnings from the airline industry where companies often create a separate low cost airline to capture the entire range of customers. There are two broad approaches as depicted in Exhibit 3.
The integrated tie-up model is based on the possibility that corporate BC may be permitted by law soon. The model envisages a highly integrated alliance between the bank and its corporate BC. The processes, roles, and pricing have to be meticulously worked out to ensure an attractive value proposition for the corporate BC as well as the sub agents of the corporate BC. Like all alliances, the challenge of creating a model that keeps the business partner interested over time is significant.

In the in house approach, the bank will ring-fence the Financial Inclusion business unit into a separate SBU with separate P&L, organization, and HR. This is to ensure that the business model can be created without any bias from the existing practices and mindset of the current business model. The business model should draw on the best practices from various successful pilots deployed inside the bank.

**Scope for further research**

A study on the Distribution of Branches of Commercial Banks in India – An Analysis has enabled the researcher to identify the following related areas for extendable research by the future generation of researchers:

1. A concurrent research on the measure of penetration of banking services through Business Correspondents and Business Facilitators with Biometric Transaction Terminals
2. A study on the efficacy of Branchless Banking Units in delivering Micro Banking Services to the last mile connectivity of the country.
3. Cost Effective Alternative Business Modeling Decision for Banking Services
4. A study on Banking services through Single Manned Tellers with pool proof satellite connectivity – Replicating the age old Public Call Offices
5. A futuristic study on setting up of Intelligent Transaction Terminals (ITM) by researching on the success rate of Brown Label ATMs and White Label ATMs

6. A proposed study on adaptation of Cloud Computing Technology to measure cost efficiency and effectiveness in terms Capex and Opex of Banking industry