

A Study on Region-wise Disparities in the Business of Regional Rural Banks (RRBs)

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Abstract

We are far away from balanced regional development, which is one of the objectives of our Five Year Plans since independence. Even after one decade of completion of the 21st century, we have been unable to achieve the objectives of the five-year plans. This is clearly evident from the facts and figures related to the Banking sector. The proportion of Regional Rural Banks (RRBs) branch network is only 4.4 and 6.6 percent in the North-Eastern region and Western region. In case of the Central and Southern region, it is 30.9 and 20.9 percent respectively. The Credit-Deposit ratio of the Southern region is as high as 96.58 and in case of the North-Eastern region, it is as low as 45.08. In this paper, an attempt has been made to study the region-wise disparities in the performance of RRBs. The findings of the study revealed that there is a difference in the region-wise performance of the RRBs. The highest CAGR was recorded by the North region at 19.51% followed by the Southern region at 19.50% during the last 16 years, and the lowest growth rate was recorded by the Central region at 17.31%.

Keywords : Regional Rural Banks (RRBs), region-wise disparities, ANOVA, post hoc tests

JEL Classification: P25, R11, R12, R13, R58

Balanced regional development is one of the objectives of our five-year plans since independence. But even one decade after the completion of the 21st century, we have been unable to achieve balanced regional development. This is clearly evident from the facts and figures related to region wise distribution of financial services, which is depicted in the Table 1. The share of Central, Eastern, and North-Eastern regions in all India GDP is high as compared to the respective regions' share in all India credit. In case of other regions, share in all India credit is higher than the share in all India GDP. Adequate finance boosts economic growth and in turn, increases the income levels. Today, the Indian Banking system is providing finance - both short-term and long-term - to industrialists as well as to agriculturalists. Regional Rural Banks (RRBs) were set up in 1975 to lend particularly in rural areas as majority of the Indian population still lives in rural areas. The census of 2011 estimated that out of a total of 1210.2

Table 1 : Distribution of Financial Services - Regional Distribution

Region	Share in all India GDP (%)	Share in population (%)	Regional per capita GDP / national per capita GDP	Share in all India credit (%)	Share in all India deposit(%)	Share in all India branches (%)
Northern	18	13.8	1.28	21.5	22.9	16.1
Northeastern	3	3.7	0.76	1.5	1.6	2.5
Eastern	14	23.6	0.58	9.2	12.9	17.7
Central	17	26.6	0.64	8.9	13.6	20.3
Western	22	15.5	1.39	32.2	26.4	15.6
Southern	28	16.9	1.63	26.6	22.6	27.4
Total	100	100		100	100	100

Source: Priya Basu (2005). "Access to Rural Finance in India: The Evidence." World Bank

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million people, 833 million people continue to live in rural India (nearly 69 percent). The total number of villages in India have increased from 6,38,588 (2001 census) to 6,40,867 (2011 census), an increase of 2,279 villages. The role of RRBs in terms of providing enough capital for the development and transformation of the rural economy is the need of the hour. Pumping of finance is a prerequisite for rapid expansion of employment and income opportunities, both farm and non-farm.

Regional Rural Banks (RRBs)

The RRBs are an integral part of the Indian banking system, with a focus on rural areas and with an objective of rural development. The RRBs have played a major role in providing banking services in far-flung rural areas, which are still unbanked or are under banked areas. Even today, after a significant growth of the Indian banking system, most of the rural households are out of the purview of the banking system, as revealed by the National Sample Survey Organization (NSSO). NSSO data has revealed that 45.9 million farmer households in the country (out of a total of 89.3 million households) do not have access to credit, either from institutional or non-institutional sources. Further, in spite of the huge network of bank branches, only 27 per cent of the total farm households are indebted to formal sources (of which one-third also borrow from informal sources). Farm households not accessing credit from formal sources as a proportion to total farm households is especially high at 95.91 per cent, 81.26 per cent, and 77.59 per cent in the North Eastern, Eastern, and Central Regions respectively, as revealed in the report on financial inclusion.

Review of Literature

Fuentes (1998) argued that banks are never neutral from a regional point of view, since they do not simply intermediate between savers and borrowers, but they also provide credit to let investment and output grow. They suggested that banks may influence regional development by producing a regional pattern of credit availability that is likely to be spatially unbalanced. Miyakoshi and Tsukuda (2004) investigated whether technical inefficiency in production in the Japanese banking industry exhibits regional disparities by using the stochastic frontier model for the year 1999. They found evidence of regional disparities in technical inefficiency, and the regional disparities in technical inefficiency explained some of the disparities in regional income growth. They argued that the recent collapse of the regional banking systems in Japan was responsible for regional economic slump. Further, they opined that the Merger Promotion Act currently in operation in Japan undermines recovery policies for regional banking. Puri (2007) strongly stressed on the fact that much of the benefits accrued due to the growth in the banking services have been limited to a minority of the total population of the country. He further added that affordable access to basic financial services has been denied to a majority of the population in the Eastern, North Eastern, and Central Indian states besides several districts in other parts of the country. Regional differences are significant with the credit coverage at 25% for the Southern region and as low as 7%, 8%, and 9% respectively in the North-Eastern, Eastern, and Central regions. Suryanarayana (2009) measured economic disparities from the perspective of the finance commission. He observed that though the two states i.e., Karnataka and Maharashtra have mean-based estimates of average income above the Indian average, they have marked inter-regional disparities, interpersonal inequalities, and intra-regional deprivations. He concluded that this scenario sets limits on the potential for resource mobilization and makes a case for investment strategies so as to promote broad-based inclusive growth across all regions at the state level.

Pal and Mitra (2010) discussed about inter-state disparities in service sector activities in India, which includes the banking and insurance sector. They estimated the growth rates of banking and insurance sector in major states of India during 1993-94 to 2004-05. According to their observation, the growth rate has varied across the states. It is highest in West Bengal and lowest in Gujarat. The average growth rate is 10.39%. The states which fall below this rate are Gujarat, Tamil Nadu, Assam, Uttar Pradesh and Uttarakhand. West Bengal, Orissa, Himachal Pradesh, Karnataka, Kerala, Haryana, and Chattisgarh states average is higher than that of the average. Chary and Aparna (2011) observed that there is a significant difference in the credit-deposit (C-D) ratio of different regions in the country. The study revealed that the C-D ratio at all India rural level is 106.5. The Southern and Western regions have the C-D ratio higher than that of the all India rural level. The highest is in the Western region with 147.5, and the lowest is in the Eastern region with 67.02. In case of urban India, the C-D ratio is 71.06. The highest was recorded in the Southern region (91.98) followed by the Western region, and the lowest ratio was recorded in the Northeastern region (38.03).

Objectives of the Study

The main objective of the present study is to assess region-wise disparities in the performance of Regional Rural Banks (RRBs). The study also focuses on the analysis of growth of business of RRBs during the given study period.

Hypotheses of the Study

- ❖ **Ho :** There is no significant difference among the regions with respect to their total business.
- ❖ **H1 :** There is a significant difference among the regions with respect to their total business.

Methodology of the Study

❖ **Data Description :** The present study covers a period of 15 years from 1997 to 2011. Year-wise data on region-wise deposits and credits was collected from Reserve Bank of India's Handbook of Statistics. Apart from the handbook, various journals and books were also referred to get the relevant information on RRBs. The total business of RRBs is the sum of deposits and credit. Year-wise, total business and growth rate of total business for each region was computed, and descriptive statistics have been computed for the same. Data on region-wise total business in ₹ (in crores) from the year 1996 to 2011, which was collected from various issues of RBI's Handbook of Statistics is presented in the Appendix 1, and this data was the basis for the entire analysis made in this study. Descriptive statistics like minimum, maximum, mean, and standard deviation for region-wise business of RRBs was computed. The Appendix 2 presents the growth rate of region-wise total business in the study period. The main purpose of including Appendix 1 and Appendix 2 is to help the reader in understanding the characteristics of the original data more clearly. In order to test the hypotheses of the study, appropriate inferential statistical technique were selected. Inferential statistical techniques can be divided into two categories i.e., parametric tests and non-parametric tests. The requirement of parametric tests is that data distribution should be normal and variance of the groups should be homogeneous.

❖ **Testing the Normality of the Data Distribution :** Normality of the distribution of data for each region was tested by applying the Shapiro-Wilk test. The Shapiro-Wilk test was chosen because of the fact that the number of years in each region is less than 50. Shapiro-Wilk statistics test the null hypothesis that distribution of the data is normal. The formula for the Shapiro- Wilk test is as follows :

$$W = \frac{(\sum_{i=1}^n a_i x_{(i)})^2}{\sum_{i=1}^n (x_i - \bar{x})^2} \dots\dots\dots(1)$$

Where,

$x_{(i)}$ is the i th order statistic i.e., the i th –smallest number in the sample ;

$\bar{x} = (x_1 + \dots\dots\dots + x_n)/n$ is the sample mean;

a_i is constant and it is given by:

$$(\alpha_1 \dots \alpha_n) = \frac{m^T V^{-1}}{(m^T V^{-1} V^{-1} m)^{1/2}} \dots\dots\dots(2)$$

Where,

$$m = (m_1 \dots\dots\dots m_n)^T \dots\dots\dots(3)$$

and $m_1, \dots, m_n$ are the expected values of the order statistics of independent and identically distributed random variables sampled from the standard normal distribution and V is the covariance matrix of those order statistics.

❖ **Testing equality of variance in the total business of selected regions :** Another important condition for a parametric test is the equality of variance in the selected groups. Levene's test was employed to test the equality of variance. It tests the null hypothesis that the variance is equal in all the groups. The test statistic W , is defined as

follows :

$$W = \frac{(N-k) \sum_{i=1}^k N_i (\bar{Z}_i - \bar{Z}_{..})^2}{(k-1) \sum_{i=1}^k \sum_{j=1}^{N_i} (Z_{ij} - \bar{Z}_i)^2} \dots\dots\dots(4)$$

Where W is the result of the test, k is the number of different groups to which the samples belong, N is the total number of samples, N_i is the number of samples in the i th group :

$$Z_{ij} = |Y_{ij} - \bar{Y}_i| \text{ where } \bar{Y}_i \text{ is the mean of } i^{\text{th}} \text{ group} \dots\dots\dots(5)$$

$$\bar{Z}_{..} = \frac{1}{N} \sum_{i=1}^k \sum_{j=1}^{N_i} Z_{ij} \quad \bar{Z}_{ij} \text{ is the mean of all } Z_{ij} \dots\dots\dots(6)$$

$$\bar{Z}_i = \frac{1}{N_i} \sum_{j=1}^{N_i} Z_{ij} \quad \bar{Z}_{ij} \text{ is the mean of for group } i \dots\dots\dots(7)$$

❖ **Analysis of Variance (ANOVA) :** Analysis of Variance enables to test for the significance of the difference among more than two sample means. It helps in making inferences about whether our samples are drawn from populations having the same mean. It tests the following null hypothesis :

$$H_0 : u_1 = u_2 = u_3 \dots\dots\dots = u_n \quad \dots\dots\dots \text{null hypothesis}$$

$$H_1 : u_1 \neq u_2 \neq u_3 \dots\dots\dots \neq u_n \quad \dots\dots\dots \text{alternative hypothesis}$$

Where u_1, u_2, u_3 and u_n refers to the mean of selected groups.

$$F = \frac{\text{between - column variance}}{\text{within - column variance}} = \frac{\hat{\sigma}^2_b}{\hat{\sigma}^2_w} \dots\dots\dots(8)$$

Estimation of between column variance

$$\hat{\sigma}^2_b = \frac{\sum n_j (\bar{X}_j - \bar{\bar{X}})^2}{k-1} \dots\dots\dots(9)$$

Where $\hat{\sigma}^2_b$ is the population variance based on the variance among the sample means, n_j = size of the j^{th} sample, $\bar{X}_j$ is sample mean of the j th sample, $\bar{\bar{X}}$ is the grand mean, k is the number of samples.

Estimation of within column variance

$$\hat{\sigma}^2_w = \sum \left(\frac{n_j - 1}{n_T - k} \right) S_j^2 \quad \dots\dots\dots(10)$$

Where, $\hat{\sigma}^2_w$ is estimation of population variance based on the variances within the sample (the within-column variance), n_j is size of the j th sample, S_j^2 is sample variance of the j th sample, k is number of samples, n_T is the total sample size.

Post - Hoc tests

The "Honestly Significant Difference" (HSD) test proposed by the statistician John Tukey was employed to conduct the post-hoc tests. It is based on studentized range distribution. To test all pair-wise comparisons among means using the Tukey HSD, the following t- test was used :

$$t_s = \frac{M_i - M_j}{\sqrt{\frac{MSE}{n_h}}} \dots\dots\dots(11)$$

Where,

$M_i - M_j$ is the difference between the i th and j th means, MSE is the Mean Square Error and n_{ij} is the harmonic mean of the sample sizes of group i and j .

Analysis and Discussion

To test the hypothesis designed for the study, ANOVA and Independent sample t-test were applied. Since these two tests are parametric tests, they insist on some important characteristics of data like distribution of the data should be normal and variance in each of the sample group should be the same. To test the normality of the distribution of data, the Shapiro-Wilk test was used. The Shapiro-Wilk test is preferable where the sample size is less than 50. Results of the Shapiro-Wilk test are presented in the Table 2.

Table 2: Shapiro-Wilk Tests of Normality						
Region	Total Business (Absolute Values)			Total Business (Natural Logarithmic values)		
	Statistic	df	Sig.	Statistic	df	Sig.
North Region	0.863	16	0.021	0.967	16	0.797
North Eastern Region	0.884	16	0.045	0.969	16	0.826
Eastern Region	0.906	16	0.102	0.974	16	0.899
Central Region	0.915	16	0.143	0.971	16	0.852
Western Region	0.894	16	0.066	0.976	16	0.921
Southern Region	0.883	16	0.043	0.967	16	0.795
All India	0.890	16	0.056	0.974	16	0.900
Source: Authors' calculations						

When absolute values were used to test the normality of the distribution, distribution of the data relating to total business in North region, North eastern region, and Southern region is not normal ($p < 0.05$). Hence, data relating to total business was converted into natural logarithmic values and then, the Shapiro-Wilk test was employed, and the results of the analysis revealed that the data of all the regions is normally distributed. Hence, in analysis of variance (ANOVA), natural logarithmic values of Total Business (LN_Total_Business) were used.

Table 3: Test of Homogeneity of Variances			
Levene Statistic	df1	df2	Sig.
0.224	5	90	0.951
Source: Authors' calculations			

Analysis of variance (ANOVA) assumes that variance of the groups of samples is equal. The Table 3 presents Levene's Homogeneity of Variance test. The analysis of the test indicates that variance of all regions is equal ($p > 0.10$). Another important pre-requisite of ANOVA is also satisfied, and hence, the next step was to run the ANOVA test.

Table 4: Analysis of Variance (ANOVA)					
	Sum of Squares	df	Mean Square	F-Statistic	'p' value
Between Groups	52.125	5	10.425	15.875	0.001
Within Groups	59.100	90	0.657		
Total	111.225	95			
Source: Authors' calculations					

The Table 4 presents analysis of variance (ANOVA). ANOVA decomposes variance into two components i.e., "between group variance" and "within group variance". "Between group variance" indicates the variance of group

mean around its overall mean. "Within group variance" implies the variance of values in each group with their respective group mean. As shown in the Table 4, the sum of squares between groups is 52.125, and the mean square between groups is 10.425; whereas sum of squares within groups is 59.10 and mean squares within groups is 0.657. F- statistic was obtained by dividing mean squares between groups by mean squares within groups, and the value of F- statistic is 15.875. In the present case, between groups mean squares is much greater than the within groups mean squares and hence, F- statistics is very large. It indicates greater difference among Regional Rural Banks in different regions with respect to their aggregate business in the concerned regions. This difference is also statistically significant at 1% level of significance ($P < 0.01$). Hence, results of ANOVA clearly indicate that the regions differed significantly with respect to their business and hence, it is worthwhile to analyze further how the regions are different from each other, and group the regions based on their similarities.

Post Hoc Test

The Post Hoc tests provide a pair-wise comparison of group means. Studies have shown that the procedure accurately maintains alpha levels at their intended values as long as statistical model assumptions are met (i.e., normality, homogeneity, independence). Tukey's Honestly Significant Difference (HSD) criterion is one of the most prominent methods used in the Post Hoc tests. Tukey's HSD is designed for a situation with equal sample size (i.e., n) per group. In the present study, for all the selected regions, the study period is 15 years only and it means that the number of observations(n) are same for each region. Hence, Tukey's HSD criterion was adopted to find the pattern or relationship between the regions that would otherwise remain undetected. Mean difference column lists the differences between the sample means. Significance lists the probability that the population mean difference is zero.

Table 5: Comparison of Business in the Northern Region with the other five regions					
Comparison between the regions	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Northern Region and North Eastern Region	1.15842746	0.28650310	0.002	0.3241215	1.9927334
Northern Region and Eastern Region	-0.50413882	0.28650310	0.497	-1.3384448	0.3301671
Northern Region and Central Region	-0.79909691	0.28650310	0.068	-1.6334029	0.0352090
Northern Region and Western Region	0.85013778	0.28650310	0.043	0.0158318	1.6844437
Northern Region and Southern Region	-0.55165188	0.28650310	0.394	-1.3859578	0.2826541
Source: Authors' calculations					

The Table 5 presents the comparison of aggregate business of all the RRBs in the Northern region with other five regions in India. Mean difference indicates the difference between the mean business for the last 15 years in Northern region and that of the other five regions. The analysis reveals that the Eastern region, Central region, and Southern region did not differ significantly from the North region ($P > 0.05$). However, it was revealed that the North-Eastern region and Western region differ significantly from the Northern region ($P < 0.05$).

Table 6: Comparison of Business in the North Eastern Region with the other five regions					
Comparison between the regions	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
North Eastern Region and North Region	-1.15842746	0.28650310	0.002	-1.9927334	-0.3241215
North Eastern Region and Eastern Region	-1.66256628	0.28650310	0.001	-2.4968722	-0.8282603
North Eastern Region and Central Region	-1.95752436	0.28650310	0.001	-2.7918303	-1.1232184
North Eastern Region and Western Region	-0.30828968	0.28650310	0.890	-1.1425956	0.5260163
North Eastern Region and Southern Region	-1.71007933	0.28650310	0.001	-2.5443853	-0.8757734
Source: Authors' calculations					

Table 7: Comparison of Business in the Eastern Region with the other five regions					
Comparison between the regions	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Eastern Region and North Region	0.50413882	0.28650310	0.497	-0.3301671	1.3384448
Eastern Region and North Eastern Region	1.66256628	0.28650310	0.001	0.8282603	2.4968722
Eastern Region and Central Region	-0.29495809	0.28650310	0.907	-1.1292640	0.5393479
Eastern Region and Western Region	1.35427660	0.28650310	0.001	0.5199706	2.1885826
Eastern Region and Southern Region	-0.04751305	0.28650310	1.000	-0.8818190	0.7867929
Source: Authors' calculations					

Table 8: Comparison of Business in the Central Region with the other five regions					
Comparison between the regions	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Central Region and North Region	0.79909691	0.28650310	0.068	-0.0352090	1.6334029
Central Region and North Eastern Region	1.95752436	0.28650310	0.001	1.1232184	2.7918303
Central Region and Eastern Region	0.29495809	0.28650310	0.907	-0.5393479	1.1292640
Central Region and Western Region	1.64923469	0.28650310	0.001	0.8149287	2.4835406
Central Region and Southern Region	0.24744503	0.28650310	0.954	-0.5868609	1.0817510
Source: Authors' calculations					

Table 9: Comparison of Business in the Western Region with the other five regions					
Comparison between	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Western Region and North Region	-0.85013778	0.28650310	0.043	-1.6844437	-0.0158318
Western Region and North Eastern Region	0.30828968	0.28650310	0.890	-0.5260163	1.1425956
Western Region and Eastern Region	-1.35427660	0.28650310	0.001	-2.1885826	-0.5199706
Western Region and Central Region	-1.64923469	0.28650310	0.001	-2.4835406	-0.8149287
Western Region and Southern Region	-1.40178965	0.28650310	0.001	-2.2360956	-0.5674837
Source: Authors' calculations					

The Table 6 presents the comparison of the North-Eastern region with other five regions on the basis of the total business in each region. Mean difference indicates the difference between the average business for the last 15 years in the North-Eastern region and that of other regions in the given period. Results of the analysis point out that there is no significant difference between the business in the North-Eastern region and the Western region ($P > 0.05$). But all the remaining four regions differed significantly from the North-Eastern region ($P < 0.01$).

The Table 7 shows the comparison of the Eastern region with other five regions on the basis of the total business conducted by the RRBs in each region. The mean difference column indicates the difference between the average business for the last 15 years in the Eastern region and that of (each) the other five regions. The analysis discloses that the Northern region, Central region, and Southern region did not differ significantly from the Eastern region ($P > 0.05$). However, the North-Eastern region and Western region differed significantly from the Eastern region ($P < 0.05$).

The Table 8 presents the comparison of the Central region with the remaining five regions on the basis of aggregate business in each region. Mean difference indicates the difference between the average business for the last 15 years in the Central region and that of the remaining five regions. The results of the test point out that the North region, Eastern region, and Southern region did not differ significantly from the Central region ($P > 0.05$). But the North-Eastern region and Western region differed from the Central region ($P < 0.05$).

Table 10 : Comparison of Business in the Southern Region with the other five regions					
Comparison between	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Southern Region and North Region	0.55165188	0.28650310	0.394	-0.2826541	1.3859578
Southern Region and North Eastern Region	1.71007933	0.28650310	0.001	0.8757734	2.5443853
Southern Region and Eastern Region	0.04751305	0.28650310	1.000	-0.7867929	0.8818190
Southern Region and Central Region	-0.24744503	0.28650310	0.954	-1.0817510	0.5868609
Southern Region and Western Region	1.40178965	0.28650310	0.001	0.5674837	2.2360956
Source: Authors' calculations					

Table 11: Homogeneous Subsets			
Region	N	Subset for alpha = .05	
		1	2
North Eastern Region	16	8.0589	
Western Region	16	8.3672	
North Region	16		9.2174
Eastern Region	16		9.7215
Southern Region	16		9.7690
Central Region	16		10.0165
'p' value		.890	.068
Source: Authors' calculations			

The Table 9 shows the comparison of the Western region with that of the remaining five regions on the basis of the total business conducted in each region. Mean difference refers to the difference between the average business for the last 15 years in the Western region and that of the other five regions. The analysis discloses that the Western region differed significantly from the remaining regions with the exception of the North-Eastern region ($p < 0.05$). The North-Eastern region does not differ from the Western region ($P > 0.05$). The Table 10 presents the comparison of the Southern region with the remaining five regions on the basis of total business conducted in each region. Mean difference refers to the difference between the average business conducted for the last 15 years in the Southern region and that of each of the other regions. The analysis reveals that the North region, the Eastern region, and the Central region did not differ significantly from the Southern region ($P > 0.05$). However, the North-Eastern region and Western region differed significantly from the Southern region ($P < 0.05$).

The Table 11 presents homogeneous subsets which classify the regions into homogeneous groups. Alpha 0.05 indicates that the null hypothesis, which states that the regions in the same column do not differ significantly, was tested at 5% level of significance. In the present case, two homogeneous subsets were defined based on similarities among the regions. The North-Eastern region and Western region are classified into one group and the North region, Eastern region, Southern region, and Central region are classified into another group. It indicates clearly that the North-Eastern region and the Western region differed from the remaining four regions with respect to their business. In each column, 'p' value is more than 0.05, indicating that the regions classified into the same group do not differ from each other at 5% level of significance.

Final Findings

Analysis of variance indicates greater difference among the selected regions with respect to the total business conducted in these regions. Further study and analysis on how regions are different from each other revealed that the North region, Eastern region, Central region, and Southern region differed significantly from the North-Eastern region and Western region. RRBs in the North Eastern region and Western region were classified into one group; and RRBs in the North region, Eastern region, Southern region, and Central region were classified into another group. It indicates clearly that RRBs in the North-Eastern region and Western region differed from the remaining four regions

with respect to the business conducted by them.

Conclusion

In terms of reach and spread of formal banking services, the North-Eastern states in India are relatively backward when compared to the other regions. This is clearly evident from the report of the Committee which has been appointed by the Reserve Bank of India to focus on financial planning in this region. The Committee in its report expressed that the region has some serious limitations with respect to banking and financial sector development, attributed mainly to the topography of the region, low density of population, infrastructural bottlenecks, low level of commercialization, lack of entrepreneurship, low network of branches, lack of simple customized and flexible financial products to suit the needs of the local population, and the most important aspects pertained to the customers, which include poor loan recovery experience, lack of awareness of banking services, and inadequate payment systems (RBI, 2005). Future policies of the Government should be framed in such a way that at least few of the above obstacles should be overcome so that banking services can be brought within the reach of the people of this region. The committee on Financial Sector Plan for North Eastern Region (July 2006) suggested that the focus should be on proactively connecting banks to the people, rather than waiting for walk-in-customers. The committee emphasized the need for adequate publicity so as to promote financial literacy among the people. The need of the hour is the appointment of business correspondents and facilitators to reach out to local people with local language and a feeling of known person for easy access.

Limitations of the Study

The present study is limited to only 15 years of data ranging from 1996 to 2011. The study considered region-wise total business, which is the sum of advances and deposits. The study is confined to analysis of aggregate business of all the RRBs in different regions. The impact of change in average business per RRB from region to region is not incorporated into the study. The present study is confined only to analyze whether there was any significant difference in the region-wise business of RRBs in India.

Scope for Further Research

The number of RRBs differ from region to region and hence, future studies can consider region-wise average business per RRB instead of focusing on region-wise aggregate business. A study can also be undertaken to assess the influence of various factors on the growth of RRBs. It can also be evaluated whether the impact of the factors - influencing RRBs' growth - is the same in all regions. Various multivariate analysis techniques like exploratory factor analysis, cluster analysis, structural equation modeling (SEM), ordinal regression, multi-nominal logistic regression, log linear model etc., can help a researcher in analysis of data and in drawing the conclusions more scientifically.

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Appendices

Appendix 1 : Region-wise Total Business (Amount in Crores of ₹)							
Year	North Region	North Eastern Region	Eastern Region	Central Region	Western Region	Southern Region	All India
1996	2723	842	4618	6894	1192	4779	21048
1997	3419	1028	5802	8664	1597	5873	26385
1998	3086	1234	7136	10753	1858	4047	32139
1999	4950	1465	8543	12651	2201	8152	37962
2000	5852	1715	10297	4679	2730	9755	45161
2001	7060	1974	12344	17640	3182	12108	54308
2002	8186	2648	14356	19943	3615	14185	62933
2003	9338	2988	16256	22811	4011	16463	71867
2004	10697	3573	18548	25637	4514	18970	81939
2005	12319	4158	20595	29203	5060	22650	93985
2006	14614	4765	23511	34306	5804	27071	110071
2007	17235	5641	27031	39691	7222	33409	130229
2008	21382	6401	32240	46677	8740	40479	155919
2009	25978	7995	39049	55338	10175	47274	185809
2010	34243	9711	46105	65799	12014	58051	225923
2011	39461	12000	52198	75571	13808	69130	262168
CAGR(in %)	19.51	19.38	17.55	17.31	17.74	19.50	18.31
Min	2723	842	4618	4679	1192	4047	21048
Max	39461	12000	52198	75571	13808	69130	262168
Mean	13784	4259	21164	29766	5483	24525	99865
Std.Dev	11225	3325	14622	21629	3871	19958	73661

Source : RBI's Handbook of Statistics and Authors' calculations

Appendix 2 : Region-wise Total Business Growth Rate (in percentage)							
Year	North Region	North Eastern Region	Eastern Region	Central Region	Western Region	Southern Region	All India
1997	25.56	22.09	25.64	25.67	33.98	22.89	25.36
1998	-9.74	20.04	22.99	24.11	16.34	-31.09	21.81
1999	60.40	18.72	19.72	17.65	18.46	101.43	18.12
2000	18.22	17.06	20.53	-63.01	24.03	19.66	18.96
2001	20.64	15.10	19.88	277.00	16.56	24.12	20.25
2002	15.95	34.14	16.30	13.06	13.61	17.15	15.88
2003	14.07	12.84	13.23	14.38	10.95	16.06	14.20
2004	14.55	19.58	14.10	12.39	12.54	15.23	14.01
2005	15.16	16.37	11.04	13.91	12.10	19.40	14.70
2006	18.63	14.60	14.16	17.47	14.70	19.52	17.12
2007	17.93	18.38	14.97	15.70	24.43	23.41	18.31
2008	24.06	13.47	19.27	17.60	21.02	21.16	19.73
2009	21.49	24.90	21.12	18.56	16.42	16.79	19.17
2010	31.82	21.46	18.07	18.90	18.07	22.80	21.59
2011	15.24	23.57	13.22	14.85	14.93	19.08	16.04

Source : Authors' calculations