CHAPTER - 3
RESEARCH METHODOLOGY
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3.1. RESEARCH METHODOLOGY

The research is very much important in the present era of knowledge, because it is very much relevant to up-gradation of technology, betterment of economy of the nation and boosting the growth in all the sectors of the globalized world. To give the exploration of ideas about research and its methodology, the present chapter discusses: problem statement, research objectives, significance and scope of the study, research design, collection of data, data analysis and interpretation, as well as the limitations of the study and Chapterization.

3.2. Problem Statement

The problem in question is to evaluate “The Financial Performance of Regional Rural Banks in India”.

3.3. Research Objectives

The tentative questions of the study are:

1. To analyze the development prototype of Indian Regional Rural Banks
2. To analyze the monetary act and measure of Indian Regional Rural Banks
3. To know the credit-distribution of Indian Regional Rural Banks in India;
4. To work out the credit-deposit ratio of Indian Regional Rural Banks
5. To understand *Growth and Viability of First and Second generation reforms period*; this portion has considered all *Indian Regional Rural* from 1991 to 2009.
6. To synthesize the pattern of deposit-mobilization and credit disbursement for the growth of rural masses; and to recommend action-based suggestions to improve the overall performance of Indian Regional Rural Banks.
3.4. SIGNIFICANCE AND SCOPE OF THE STUDY

The study under question is quite beneficial for academicians, scholars to make a viewpoint the performance and present studies of the RRBs in India. Industrialists, entrepreneurs and service providers may get help from the study after knowing the prospective of RRBs in the Indian market. Additionally, it is possible that Government of India and other ministries of it may be benefited for policy formulation and execution for RRBs in future. In the present study, Regional Rural Banks in India as a whole during 1990-2010 have been studied. To understand the concept better I undertook a study on *Growth and Viability of First and Second generation’s reforms period*, this portion has considered almost every RRBs functioning in India for the duration of 1991 to 2009. I divided the total study period into distinct vise; the first and second generation which comes under the periods 1991 to 1998 and 1999 to 2009 are reforming period for the purpose to learn the impact of deregulation on the financial competence of banks.

3.5. RESEARCH DESIGN

The proposed research design is descriptive and exploratory in nature.

A research design is merely and basically the structure or arrangement for a research that directs the compilation and investigation of the data. Moreover, the research design indicates the methods of research i.e. the method of gathering information and the method or sampling. Descriptive research approach is also called as statistical research method that explains data and distinctiveness for a particular population or experience or event being considered. Additionally, descriptive research relates with all that can be calculated and analyzed.

3.6. DATA COLLECTION

In the present study, secondary data have been used for synthesizing the objectives. The secondary data have been collected from different books, articles, journals, newspapers, Indian Banks Associations (IBA) publications especially the performance highlights of selected Regional Rural Banks, RBI, the annual reports of the banks concerned and views of various committees constituted for restructuring and financial viability of RRBs have been considered.
3.7. DATA ANALYSIS AND INTERPRETATION

The data collected from secondary sources is edited, classified and tabulated to make it useful and convenient of further analysis. The various statistical techniques like percentage, compound annual rate of growth, data envelopment analysis, standard deviation, etc. and ranking have been used. For better presentation of the data and to make it interesting and understandable, tables have also been used. The interpretation of data is based on rigorous exercise aiming at the achievement of the objectives of the study and findings of the existing studies.

3.8. Research Instruments:

- Pearson Correlation
- Malmquist Index
- Growth Rate
  - C.V.
  - Variance
  - t test
  - Regression
- Outlier detection
- Shift detector

Performance parameter of Regional Rural banks in India are mentioned below.

Formula to check growth:-

\[
\left\{ \frac{(\text{Value of 2009} - \text{Value of 1999})}{\text{value of 1999}} \times 100 \right\}
\]

Correlation Analysis:

Correlation considers two variables x and y: \( Y = a + b \times X \)

Chi-Square:
The referral name for the test of chi-square is chi-square test or \( x^2 \) test. Unlike other tests, chi-squared test is statistical hypothesis test. Here, the sampling allocation of the test static is a chi-squared allocation when the value of null hypothesis is coming out to be true, or this is asymptotically true. It means that it is apparent to apply the sampling allocation when the null hypothesis is true. This could probably lead to approximate a chi-squared allocation as aspiration by making the size of the sampling to some higher extent.

**“t” test:**

Consider that "t" is the variation between two sample means measured using the standard error of those means, or "t". It was observed that there is no major difference in achievement between group 1 and group 2 on the test.

\[
t = \frac{\text{Difference between two means}}{\left( \frac{\text{Variance}}{\text{Sample size}} \right) \text{ Standard Deviation}}
\]

Standard deviation of the mean = \( \sigma_x = \sigma / \sqrt{n} \)

**Malmquist Index:**

The Malmquist Index (MI) is considered to be a joint index which could be used to judge against the production technology of two economies. The reason for this name is Professor Sten Malmquist who introduced this index method, and on whose ideas it is based. It is also called the Malmquist Productivity Index.

It could be noted that the MI of First Generations Reforms relating to Second Generations Reforms is the equal of the MI of Second Generations Reforms relating to First Generations Reforms period. If the MI of First Generations Reforms relating to Second Generations Reforms is less than 1, the total production technology of economy Second Generations Reforms is greater to that of economy First Generations Reforms.

The production function is a key concept of the Malmquist Index as it is a function of most probable production, concerning a set of inputs that are relevant to labour and capital. Thus, in the production function of Economy A, if \( S_Q \) is the set of labour and capital input, then it is considered that \( Q \) is the production function of Economy A.
As a result,

\[ Q = f_a(S_a) \]

In order to determine the Malmquist Index of economy A with regard to economy B, it is necessary to replace with the labour and capital inputs of economy A into the production function of economy B, and vice versa. The formula for Malmquist is represented as follows:

\[ MI = \sqrt{(Q_1Q_2)/(Q_3Q_4)} \]

Here,

\[ Q_1 = f_a(S_a) \]
\[ Q_2 = f_a(S_b) \]
\[ Q_3 = f_b(S_a) \]
\[ Q_4 = f_b(S_b) \]

**Factor Productivity:**

From the key sub-segments two aspects of output are Competence and Skill Development. Here, it has been supposed that the previous holding "special" characteristic aspects such as affirmative externalities and non-competiveness are assumed to be a carter of financial development.

It is also mentioned that Total Factor Productivity is often observed as the genuine carter of development that is for the reason, an economy and research expose that whereas efforts and venture are significant donors, Total Factor Productivity may be responsible for up to 60% of development inside economies.

The subsequent expression signifies complete productivity (Y) as a function of total-factor productivity (A), wealth input (K), efforts input (L), and the two inputs' individual stakes of result (α and β are the capital input stake of involvement for K and L correspondingly). It is likely that a rise in any of A, K or L will result in a rise in production. In spite of the point that wealth and effort input are concrete, total-factor productivity seems
to be more insubstantial as it can vary from skill to acquaintance of employee (human wealth).

\[ Y = A \times K^\alpha \times L^\beta \]

3.9. RESEARCH LIMITATIONS

1. The current research limits itself because of lack of time just monetary working features of Regional Rural Banks.

2. The entire study is completely based on secondary data which has been gathered and submitted from the yearly reports of NABARD and RBI.

3. Therefore, due to lack of time and resources, the primary data could not be collected.

4. The researcher has limited knowledge of statistical softwares like SPSS, SAP, Excel, etc.