

Chapter IV

CHAPTER IV

RESEARCH METHODOLOGY

Research is a scientific and systematic search for appropriate information on a specific topic. In fact, research is an action of scientific investigation. Research methodology is a way to systematically solve the research problem. This chapter deals with the description of the procedures adopted for data analysis as well as statistical methods used for analysis of the data interpretation.

4.1 Rationality of the Study Conduct

A bank is a financial institution that delivers banking and other financial services to their customers. A bank is generally understood as an institution which provides fundamental banking services such as accepting deposits and providing loans. Scheduled Commercial banks, given their pre-eminent position in the regulated financial sector in India, thus it plays dominate role in the credit market. The quantity of loans shaped by the banking system is mostly a function of both the willingness and ability of banks to lend. The credit market structure in India has evolved over the years.

Scheduled commercial banks constitute the predominant segment of the credit market in India (Credit Market nd). Retail credit comprising mainly housing loans, advances to individuals against fixed deposits, credit card, educational loans and loans for purchase of consumer durables has become chief component of banks' loan portfolio offered in India. In India, until the initiation of financial sector reforms in 1991, there were too many restrictions on retail credit in the form of limits on the total amount of housing loan, loans to individuals, interest rate, margin requirement, and prescription of the maximum repayment period, among others. However, banks were contracted with freedom in the early 1990s to decide the quantum, rate of interest, margin requirement, repayment period and other related conditions of retail loans. These relaxations had a positive impact on the growth of personal loans in the second half of the 1990s (Ramasundaram and Aiswarya, 2011).

The sharp increase in bank credit to the household sector has been contributed by several factors. The demand for credit by the industrial sector reduced down, especially between 1996-97 and 2001-02, due to their focus on restructuring and consolidation, as

indicated to earlier which encouraged banks to focus on retail loans. High level of NPAs, in particular, might have encouraged banks to concentrate progressively on a retail portfolio. From the banks' viewpoint, the retail and mortgage loans, being less, does not involve much exposure to a single borrower. The better asset quality is encouraging all leading banks to grow their retail advances faster than any other segment (Manju, 2015). In short, the bank i.e., the lenders have earned higher profits in absolute terms by putting a larger share in retail lending. They have also benefited from asset quality as defaults are lower in segments such as home loans compared with corporate loans (Gap in bank retail focus strategy nd). The above discussion draws an empirical rationality for the conduct of this study.

4.2 Research Methodology

The current study is diagnostic and exploratory in nature. The study is primarily based on the secondary data. In the first stage of the study, desk research was carried to collect, review and draw a clear empirical understanding of previous research works and their discussion on performances of scheduled commercial banks in India, growth of retail loan market in India and impact of NPAs on the performances of banks in India. In the second stage, secondary data for descriptive analysis were collected from RBI published data base for 14 years 2001-02 to 2014-15.

4.2.1 Research Design

The research design refers to the overall strategy that researcher chooses to integrate the different components of the study in a coherent and logical way, thereby, ensuring researcher will effectively address the research problem; it constitutes the outline for the collection, measurement, and analysis of data. The research design of a study draws a detailed outline of how a research investigation will take place. A research design will typically include how data is to be collected, what instrument will be employed how the instruments will be used and the intended means for analysing data collected.

The present study is problem-solving and exploratory in nature and makes use of the secondary data. The relevant secondary data has been collected essentially through

the databases of Reserve Bank of India (RBI). An attempt has been made in this study to examine the retail loan lending and recovery practices of Scheduled Commercial Banks in India since 2001-02 to 2014-15.

4.2.2 Sampling Procedure

Out of the various classifications of the schedule commercial banks functioning in India, the current research work is confined into Nationalized Banks, SBI & Associates Banks, Old and New Private sector banks and Foreign Banks. From the elaborate data analysis, it has been inferred that there are 89 schedule commercial banks (excluding rural banks) functioning in India as on March 2014. Of which 21 are Nationalized Banks, 6 SBI & its Associates, 13 Old Generation Private Sector Banks, 7 New Generation Private Sector Banks and 42 Foreign banks. The current study was restricted to only group banks and no individual bank performances towards retail lending were considered for analysis.

Sl. No	Nationalized Banks	SBI & its Associates	Old Private Sector Banks	New Private Sector Banks	Foreign Banks
1.	Allahabad Bank	State Bank of India	Catholic Syrian Bank	Axis Bank	AB Bank
2.	Andhra Bank	State Bank of Bikaner & Jaipur	City Union Bank	Development Credit Bank	Abu Dhabi Commercial Bank
3.	Bank of Baroda	State Bank of Hyderabad	Dhanalakshmi Bank	HDFC Bank	American Express Bank
4.	Bank of India	State Bank of Mysore	Federal Bank	ICICI Bank	Antwerp Diamond Bank
5.	Bank of Maharashtra	State Bank of Patiala	ING Vysya Bank	IndusInd Bank	Australia and New Zealand Banking Group
6.	Bharatiya Mahila Bank Ltd	State Bank of Travancore	Jammu & Kashmir Bank	Kotak Mahindra Bank	Bank International Indonesia
7.	Canara Bank	-	Karnataka Bank	Yes Bank	Bank of America N.A.
8.	Central Bank of India	-	KarurVysya Bank	-	Bank of Bahrain & Kuwait B.S.C.
9.	Corporation Bank	-	Lakshmi Vilas Bank	-	Bank of Ceylon
10.	Dena Bank	-	Nainital Bank	-	Bank of Nova Scotia

Sl. No	Nationalized Banks	SBI & its Associates	Old Private Sector Banks	New Private Sector Banks	Foreign Banks
11.	IDBI	-	Ratnakar Bank	-	Bank of Tokyo - Mitsubishi UFL LTD
12.	Indian Bank	-	South Indian Bank	-	Barclays Bank PLC
13.	Indian Overseas Bank	-	Tamilnadu Mercantile Bank	-	BNP Paribas
14.	Oriental Bank of Commerce	-		-	Citibank N.A.
15.	Punjab & Sind Bank	-		-	Common wealth of Australia
16.	Punjab National Bank	-		-	Credit Agricole
17.	Syndicate Bank	-		-	Credit Suisse AG
18.	UCO Bank	-		-	DBS Bank
19.	Union Bank of India	-		-	Deutsche Bank
20.	United Bank of India	-		-	First Bank
21.	Vijaya Bank			-	Hongkong & Shanghai Banking Corpn.
22.					HSBC Bank Oman S.A.O.G
23.					Industrial and Commercial Bank of China
24.					JP Morgan Chase Bank
25.					JSC VTB Bank
26.					Krung Thai Bank Public Company Limited
27.					Mashreq Bank
28.					National Australia Bank
29.					Mizuho Corporate Bank
30.					Rabo Bank International

Sl. No	Nationalized Banks	SBI & its Associates	Old Private Sector Banks	New Private Sector Banks	Foreign Banks
31.					Royal Bank of Scotland N.V.
32.					Sberbank
33.					Shinhan Bank
34.					SocieteGenerale
35.					Sonali Bank
36.					Standard Chartered Bank
37.					State Bank of Mauritius
38.					Sumitomo Mitsui Banking Corporation
39.					UBS AG
40.					United Overseas Bank
41.					Westpac Banking Corporation
42.					Woori Bank
Total	21	6	13	7	42 (89)

Source: Annual Report of RBI 2013-14 & 2014-15

Figure 4.1. Scheduled Commercial Banks In India

4.2.3 Rational Evidences for Study Parameter Selection

Retail loans are offered by the scheduled commercial banks operating in India for various purposes like acquisition of consumer durables, for meeting travel, medical expenses and also offer great scope for credit absorption. Moreover, in India, retail loans have sound security support, which appreciates with time. The level of a non-performing asset in the case of the retail is comparatively less. With very low post credit supervision costs, the profits from retail loan margins become attractive for banks, especially in a scenario of falling interest rates after the liberalisation of the Indian economy in 1991. According to Credit Information Bureau of India Limited (CIBIL), the country's leading credit information company, retail NPAs have immersed to their historical lows with

crimes on home loans and other retail loans showing a significant fall. Drawing evidence from the above discussion following parameters are considered for analysis:

- ❖ Total advances lent by the scheduled commercial banks in India.
- ❖ Total number personal loan takers from scheduled commercial banks in India
- ❖ Value of total personal loan lending by scheduled commercial banks in India
- ❖ Category-wise credit (Consumer Durable loan, Housing loan and Rest of the Personal loan) lending by scheduled commercial banks in India
- ❖ Proportion of total retail credit to total advances
- ❖ Proportion of outstanding to total retail credit and category-wise segmentation of retail loan outstanding
- ❖ Proportion of recovery to total retail credit and category-wise segmentation of retail loan outstanding
- ❖ Movement of NPA of the scheduled commercial banks in India

4.2.4 Sources of Data

The data collection are divided into two stages for the effective conduct of the research work. In the first stage, the researcher largely concentrated on the review of secondary data of available literature, which form a part of the desk research work. The data were also collected from bank reports, RBI database, bank performances reports published in journals, magazine and website related to focus problem.

4.2.5 Period of Study

The retail loan data pertaining to 14 years i.e., 2001-02 to 2014-15 were collected for the effective conduct of this study. The study focuses on analysing the growth trend and retail recovery practices of the scheduled commercial banks operating in India since the beginning of new millennium.

4.2.6 Significance of the Study Period

The sharp increase in bank credit to the household sector has been contributed by various factors. First of all the demand for credit by the industrial sector slowed down,

especially between 1996-97 and 2001-02, due to their attention on restructuring and consolidation, as alluded to earlier. This encouraged banks to focus on retail loans. High level of NPAs, in specific, might have encouraged banks to focus increasingly on a retail portfolio. From the bank's viewpoint, the retail and mortgage loans, being small, do not involve much exposure to a single borrower. As a result, the average risk linked with retail loans is lower as they are spread across diversified customers provided banks do not dilute the credit appraisal standards in an enthusiasm to increase lending to this sector.

Also, in the case of mortgage loans, there is sufficient collateral structure, particularly for housing and auto loans. It is easier to decide the realistic sale value of housing, unlike commercial property in the case of corporate loans. Secondly, with high economic growth, job opportunities have expanded and income levels have risen. Tax rates have also moderated over the years. As a result, disposable incomes have risen sharply in recent years. This has increased the ability of the borrowers to repay the loans. With the decline in inflation and stable inflationary expectations, the inflation risk premium fall results in a decline of both nominal and real interest rates. This encouraged the households to avail credit for numerous purposes such as purchase of houses, automobiles, and consumer durable items. Increase in real estate prices as also the stock market might have also boosted the household demand for bank credit for all loans i.e, home loans and consumer durable and other loans.

4.3 Financial and Statistical Tools Applied for Data Analysis

To have a clear understanding of data collected and to draw significant relevance between the variables considered for the study both financial and statistical tools were applied.

a. Financial Tools Applied

The following are some the financial data analysis techniques used in the study.

1. Comparative Statements
2. Trend Analysis (Time-series Analysis)
3. Ratio Analysis.

These methods were discussed briefly in the following paragraphs.

i. Comparative Statements

The comparative financial statement is an important device of horizontal financial analysis. Financial data becomes more meaningful when compared with similar data for a previous period or a number of prior periods. Statements prepared in a form that reflected financial data of two or more periods are known as Comparative Statements. The Comparative income statement provided an idea of the progress of a business over a period of time. The changes in absolute data in money values and percentages could be determined to analyse the profitability of the business. Comparative income statement should four columns. First, two columns offered figures of various items for two years. Third and fourth columns are used to show increases or decreases in records in absolute amounts and percentages, respectively.

ii. Trend Analysis

Trend analysis is an important tool of horizontal financial analysis. This method determined the direction upwards or downwards and involved the computation of the percentage relationship that each statement item bore to the same item in the base years. The information for a number of years is taken-up and one year, generally the first year, is taken as the base year. The figures of the base year are taken as 100 and trend ratios for other years are calculated on the basis of the base year. One could form a better view of things unaffected by short-term influenced by a study of long-term trend percentages.

The index figures or trend percentages offered a bird's eye view of the comparative data by presenting it in a form of easy to interpret. Horizontal trend analysis is also dynamic in character as it brings out the rate of change in individual items over the years. By showing the relative changes, it disclosed unequal changes whose significance was analysed and interpreted. This kind of analysis is particularly applicable to the items of profit and loss account. The trend of profitability ratios could also be studied over a period of time.

iii. Financial Ratio

This study computed three ratios for evaluating the proportion of credit lend to small borrowers, per cent of loan recovered by Public Sector Banks(PSBs) and the loan outstanding (NPA) status of banks.

- (i) **The proportion of Total Personal Loan to Total Advances:** This ratio was computed by dividing the total advance of scheduled commercial banks from the total personal loan by the Nationalized Banks, State Bank of India and its Associates, Private sector banks and Foreign banks.
- (ii) **Percentage of Loan Recovery:** This ratio was computed by dividing the loan recovered by the banks with the total advances of the bank.
- (iii) **Percentage of Loan Outstanding:** This ratio was computed by dividing the loan outstanding by the banks with the total advances of the bank.
- (iv) **The proportion of Personal Loan to consumer durables, housing and rest of the personal loans:** This ratio was computed by dividing the total personal loans of scheduled commercial banks from the subcategory.

iv. Statistical Tools Applied

The following statistical tools were applied in addition to the financial ratios calculated: Measure of Dispersion, Co-efficient of variance, Compound growth rate, Paired “t” test and Pearson’s Correlation.

a. Descriptive Statistics

Measures of Summary statistics were applied to measure Mean and, Standard Deviation between the financial parameters of sample Banks.

i. Mean

Arithmetic Mean is the total values of the items divided by their number. A.M is the abbreviation and \bar{x} (read as x-bar) is the symbol for an arithmetic mean. The terms ‘mean’ and ‘average’ (singular) also referred to the arithmetic mean.

$$X = \frac{\sum x}{N}$$

x denoted a given value. $\sum x$ denoted the sum of all x. \sum (read, sigma) is a symbol which is used to denote the sum or the total of the values given after the symbol

ii. Standard Deviation

Standard deviations are taken from the actual mean.

The following formula is applied:

$$\sigma = \sqrt{\sum x^2 / N}$$

Calculate the actual mean of the series, i.e., \bar{X}

Take the deviations of the items from the mean, i.e., find $(X - \bar{X})$.

Denote these deviations by x .

Square these deviations and obtain the total $\sum x^2$

Divide $\sum x^2$ by the total number of observations, and extract the square-root.

This gives us the value of standard deviation.

b. Co-efficient of Variation

The coefficient of Variation is the widely used and most popular relative measure of two or more group of variables. The group which has less C.V is said to be more uniform or more stable or more homogeneous. More Coefficient of Variation indicates greater variability or less consistency or less uniformity or less stability or less homogeneity.

$$C.V = \frac{\sigma}{x}$$

c. Annual Compound Growth Rate

The Annual Compound Growth Rate help the researcher to measure the average annual growth of individual sample banks for the various variables measured and analysed. Estimates of the trend are not only of academic interest, but also they are of considerable significance to the policy maker. Computation of growth rates is the most prevalent method for this purpose. The method of computation should be such which used the complete series of observations. The basic approach is to specify the variable under study as a fraction of the time. To understand the concept of compound growth rate, It was assumed that the value of Y in the base period ($t=0$) is 100 and it grows over time at the rate 10% every the value of Y at different points of time shall be as follows.

$$\hat{B} = yt - \frac{(\sum y^2)(\sum t)}{\frac{n}{\sum t - \frac{(\sum t)^2}{n}}}$$

d. Pearson's Correlation

Karl Person's Correlation was applied to analyse the correlation between the individual bank's performances for all the parameters used in the study.

The most common measure of correlation is the Karl Pearson product-moment coefficient of correlation (r). This measure expresses both the strength and direction of linear correlation. This is measured by the formula:

$$r = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

Where

r = the Pearson correlation coefficient

N = the total number of pairs of X and Y

X = raw score on the X variable

Y = raw score on the y variable

f. Paired t-Test

Paired t - test is based on t-distribution and is considered a suitable test for judging the significance of a sample mean or for judging the significance of difference between the means of two samples in case of small sample(s) when population variance is not known (in which case, researcher could use variance of the sample as an estimate of the population variance). In case two of samples are related, the researcher used paired t-test (or what is known as difference test) for judging the significance of the mean of the difference between the two related samples. It could also be used for judging the significance of the coefficients of simple and partial correlations. The relevant test statistic, t, is calculated from the sample data and then compared with its probable value based on t-distribution at a specified level of significance for concerning degrees of

freedom for accepting or rejecting the null hypothesis. It was noted that t-test applies only in case of small sample(s) when population variance is unknown.

$$t = \frac{\bar{x} - \mu_{H_0}}{\sigma_s / \sqrt{n}} \text{ with } (n-1) \text{ degrees of freedom}$$

Where,

\bar{x} = Mean of differences

σ = Standard deviation of differences

n = Number of variables/case

4.4 Summary

The current chapter provided a brief sketch of working concepts applied in the study, research methodology adopted and the application of various statistical tools to draw the significance and to test the relevance of variables.