Research Methodology
CHAPTER 2

RESEARCH METHODOLOGY

2.1 Introduction
2.2 Research Definition
2.3 Review of Literature
2.4 Importance of the study
2.5 Scope of the study
   2.5.1 Coverage Area
   2.5.2 Duration of Study
2.6 Objectives of the Study
2.7 Hypotheses of the Study
2.8 Research Methodology
   2.8.1 Statement of the Problem
   2.8.2 Data Collection
      2.8.2.1 Sources of Data collection
   2.8.2.2 Population
   2.8.2.3 Sample Size
      2.8.3 Hypotheses Research Methodology
2.9 Limitations of the Study
2.10 Chapter Scheme
2.1 Introduction

One of the vital keys to any research work is the research and analysis of its steps that are implemented. These steps must be appropriate to test hypotheses or questions of the research and to facilitate the access ability of overall design of the research such as collection of data and analysis of data.

This chapter describes the approaches that are used in this study in order to test the hypotheses of the problem under the study and provides the reader with a basis for choices that were made and sufficient details that another researcher can replicate this study. In this chapter, some vital objects related to research methodology such as importance of the study, statement of the problem, scope of the study, objectives, hypothesis, limitation of the study and their methodologies developed for them, data instruments including collection of data, selection of sample, definition of research variables, analysis of data and finally at the end chapter scheme are stated.

2.2 Research Definition

The research …

- Is any systematic activity carried out in the pursuit of truth
- Is a purposive investigation
- Is the application of scientific method to add to the present pool of knowledge
- Is an endeavor to arrive at answers to instinctual and practical problems by the application of scientific method
• Is a way of finding new ways of looking at familiar things in order to explore
  ways of changing it
• Is a way of finding new ways of looking at familiar things in order to explore
  ways of changing it
• Is an organized inquiry, designed and carried out to provide information for
  solving significant and pertinent problems
• Is an activity that extends, corrects or verifies knowledge
• Seeks to find explanations to unexplained phenomenon – social and physical, to
  clarify the doubts and correct misconceived facts. Also research, as defined by
  Kerlinger, is a systematic, controlled, empirical and critical investigation of
  hypothetical propositions about the presumed relationships among natural
  phenomenon.¹

2.3 Review of Literature

The researcher has taken a review of eleven references as mentioned
below:

1) P.G. Deshmukh has reviewed the working of the District Central Co-operative
Bank in India. He states that employees of every DCC bank in the state have to
formulate their own representative union. There was serious problem of over
dues of DCC Banks in Maharashtra. He suggested that these should be close co-
operation between officials and non-officials to have an effective campaign of
recovery of overdue.

2) Reddy and Reddy have evaluated the working of the DCC Bank of Chittoor in
Andhra Pradesh in their book entitled, "co-operatives and rural Development".
They suggested that Bank should undertake deposit mobilisation scheme. The
DCC bank should instruct the PACS to promote the economic interests of rural
poor, particularly weaker sections of society.

3) Ingale, Sale and Nawadkar have analysed economics of multipurpose co-
operative societies in Kokan region of Maharashtra. According to them, PACS
were doing four types of business: financing short-term loan, medium term loan,
sale of farm requests and sale of consumer goods.

4) Ranganekar emphasised the role of co-operative movement in agricultural
finance. Most of such studies are in connection with the role of short, medium
and long-term credits.
5) The role of co-operative credit in agricultural development has been emphasised by B. N Chaubey. According to him, credit is one of the important inputs, which increases productivity and leads to profitable agriculture.

6) Dr. Ingale has pointed out that "co-operation in India started with agricultural credit and even today agricultural credit domination the spectrum of co-operative activity in the country.

7) Dr. V.V. Ghanekar has studied and published a book entitled, "Co-operative movement in India". He has taken the historical account of the development of the co-operative banks in India. This book will be referred by the researcher as the background of study.

8) Dr. B.S. Mathur has published a book titled, "Co-operation in India". It highlights the important aspects of the co-operative banks. This book will also be referred by the researcher and cited the reference properly.

9) Dutta and Sundaram has published book on "Indian Economy 2006" which is useful reference book for the purpose of this study.

10) Vaikunth Mehata National institute of co-operative Management, Pune, published studies in co-operation an interdisciplinary approach. In this book, the article of shri. D. Jhais published on the topic "Development of Co-operation for Economic Development in India". This will be used while stressing the historical account of the co-operative banks and it will be cited properly.

11) The book written by Kamat G. S, on "New dimensions of co-operative management" highlights new trends in co-operative banking.

12) Dr. Shirodkar S.L has done work on "Co-operative Movement of Kolhapur District" for his doctoral research.

### 2.4 Importance of the Study

The co-operative movement in India is not an indigenous one. The pattern in the beginning was borrowed from some of the western countries like Germany etc., where it has proved successful. Non-Agricultural credit societies may be divided in general into banking societies, large and small which are doing general banking business, financing traders, entrepreneurs and other groups, and societies for salary or wage earners. Urban banks form the most important single group under non-
agricultural credit societies. Recently, it has been suggested that urban banks can play a very useful part in the promotion and development of small-scale industries.

The urban co-operative credit societies and banks occupy a prominent place among the agencies supplying credit needs of people rendering in urban areas. They advance loans mostly to the small traders, artisans and salary earners on personal security as well as against gold, silver and product.

Even though, the primary co-operative banks have made progress particularly after 1966, when the R. B. I brought them in its preview under the Banking Regulation after 1949. However, this functioning has been confined to 4 to 5 states only.

The co-operative banks should work like professional organization on sound managerial systems. The banks boards should be professional and accountable ones. Co-operative banks will have to evolve sound personnel policies encompassing proper manpower planning and assessment. Banks should have objective and transparent policies for recruitment of staff.

2.5 Scope of the Study

The scope of the study in two sections (Duration of Study and Coverage Area) is as follows:

2.5.1 Coverage Area:

The selected Urban Co-Operative Banks are in Pune city and hence Pune city is covered for the purpose of study.

2.5.2 Duration of Study:

The period of study is 5 years i.e., 1st April 2006 to 31st March 2011. (2006-07 to 2010-11).

2.6 Objectives of the Study

The study is undertaken with following major objectives:

1) To study the development of co-operative banking in India, Maharashtra with reference to Pune city.
2) To study the performance of the selected Urban Co-operative Banks in Pune city.
3) To study the impact of policies and regulations by government on selected Co-operative Banks in Pune city.
4) To study the impact of profitability and cash flow generating of the selected co-operative banks in Pune on debt paying ability.
5) To highlight the problems of selected Co-operative Banks in Pune and to suggest the remedial measures.

2.7 Hypotheses of the Study

The set of hypotheses laid down to study the research problem is as under:

2.7.1 Hypothesis No.1

Debt-paying ability of selected co-operative banks is affected by their profitability and operational cash flows.

Sub-hypotheses NO.1 are as under:

No.1.1) There is a significant relationship between OP/TA and LL/FA ratio.
No.1.2) There is a significant relationship between NP/TE and LL/FA ratio.
No.1.3) There is a significant relationship between NCFOP/TA and LL/FA ratio.
No.1.4) There is a significant relationship between OP/TA and TL/TA ratio.
No.1.5) There is a significant relationship between NP/TE and TL/TA ratio.
No.1.6) There is a significant relationship between NCFOP/TA and TL/TA ratio.

2.7.2 Hypothesis No. 2

The selected Urban Co-operative banks in Pune have performed their duties satisfactorily.

Sub-hypotheses No. 2 are as under:

No.2.1) There is a significant relationship between EPS and ROA, ROE ratio.
No.2.2) There is a significant relationship between DPS and ROA, ROE ratio.
No.2.3) There is a significant relationship between CRAR and ROA, ROE ratio.
No.2.4) There is a significant relationship between TE/TA and ROA, ROE ratio.

2.7.3 Hypothesis No. 3

The selected Urban Co-operative Banks are not professional organizations.

2.7.4 Hypothesis No. 4

There is a need for co-operative banks in India vis-a-vis in Pune city due to customers need.

2.8 Research Methodology

2.8.1 Statement of the Problem:

The co-operative banking has completed a century. It has undergone through different phases. This movement did not have significant progress till the independence.

During five-year plan it got momentum. The co-operative banking is depending on the government support. Most of the co-operative credit societies and ultimately co-operative banks were given financial help by state and central government. Now after globalization in 1992, it has to face a number of problems, such as global competition, the problem of computerization in co-operative banks such as other issues are most important. They are studied in this research. Such type of research, so far as the researcher knows, is not available hence it is a unique study.

Despite the importance of co-operative banks in the Indian economy, of late there has been a huge debate concerning the regulation of these banks. These concerns have been triggered by a spate of us to the central question of what are the problems that plague this sector and what could be the possible remedies, so it is necessary to study in this regard.
The present research is "The critical study of the performance of selected co-operative Banks in Pune city".

2.8.2 Data Collection:

The methods of data collection depend upon the sources of data collection including primary sources of data and secondary sources of data. For this study to collect primary data, field visit, interview and questionnaire and to collect secondary data, websites, external and internal sources including annual reports and financial statements of selected banks were utilized. In this study, both sets of methods of data collection have been utilized with the same emphasis and they have created valuable information to this research. Exhibit represents in details the methods of the sources of data collection.

2.8.2.1 Sources of Data collection:

Primary Data:

The researcher has used the following sources to collect data.

- Interview
- Questionnaire

Step of collection: List of required information
- Farming the questions
- First draft of questionnaire & per-testing it
- Final draft
- Distribution of questionnaires in the 2\textsuperscript{nd} sample

Secondary Data:

The secondary data are collected from selected five urban co-operative banks.

- Internet
- Internal sources: Annual report and financial statement
- External sources: published sources, Books, Journals, Magazines

The following libraries are important source for collecting the secondary data.
2.8.2.2 Population

For this study, the population is total of listed co-operative Banks in Pune city.

2.8.2.3 Sample Size:

The stratified sampling method is used for collection of data. Initially Maharashtra state is selected which is followed by selection of Pune District and then by selection of Pune city.

(A) Selection of Maharashtra State:

There were 1813 Urban Co-operative Banks on 31st March 2007 in India. Out of them the number of Urban Co-operative Banks in Maharashtra on 31st March 2007 was 622 (33.97%) with 4010 branches. Maharashtra is on the top in the number of Urban Co-operative Banks (UCBs) in India. Hence, Maharashtra state is selected for the purpose of study.

(B) Selection of Pune District:

At the second stage, Pune district is selected as it had highest number of UCBs in Maharashtra state. Out of 616 UCBs in Maharashtra state on 31st March 2007 the number of UCBs in Pune district on 31st March 2007 was 63 (10.22%). The researcher has selected Pune district for the purpose of study as it is the fairly high in number of UCBs in the state.

(C) Selection of Pune City:

The total number of UCBs in Pune city was 54 according to Pune District Sahakari Bank Association Ltd, Pune. Hence it is selected for the purpose of study.
(D) Selection of Urban Co-operative Banks in Pune city:

The list of UCBs in Pune city is obtained from the Pune District Sahkari Bank Association, Pune. There are 54 UCBs in Pune city. The researcher has selected 10% of these total 54 UCBs in Pune city by using the sampling technique of statistics. These banks are selected on the basis of their date of establishment and the credit deposit ratio maintained by them. Table 2.1 explains the selection of UC Banks in Pune.

Table No. 2.1
Selection of Urban co-op. Banks in Pune city

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Particulars</th>
<th>Cosmos co-op Bank</th>
<th>Sarswat co-op Bank</th>
<th>Janta co-op Bank</th>
<th>Vishweshwar co-op Bank</th>
<th>Shri Shrada co-op Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Date of Establishment</td>
<td>18.01.1906</td>
<td>14.09.1918</td>
<td>18.10.1949</td>
<td>18.09.1972</td>
<td>09.02.1978</td>
</tr>
<tr>
<td>2</td>
<td>Total Deposits</td>
<td>9136.66</td>
<td>15800.76</td>
<td>3316.91</td>
<td>717.53</td>
<td>202.88</td>
</tr>
<tr>
<td>3</td>
<td>Total Advances</td>
<td>6384.27</td>
<td>11511.99</td>
<td>2246.11</td>
<td>427.76</td>
<td>104.77</td>
</tr>
<tr>
<td>4</td>
<td>Credit Deposit Ratio</td>
<td>69.87%</td>
<td>72.85%</td>
<td>67.73%</td>
<td>59.55%</td>
<td>51.48%</td>
</tr>
</tbody>
</table>

Source: Annual Reports of UC Banks Pune (2007-08)
2.8.3 Hypotheses Research Methodology

According to population, and sample size, research variables and data analysis of each hypothesis is different. So, researcher has used following methodologies for each hypothesis:

2.8.3.1 Hypothesis No.1

Debt-paying ability of selected co-operative banks is affected by their profitability and operational cash flows.

For the survival of any business, it should be able to generate sufficient earnings and cash flows to do its obligations on due dates. Therefore, the profitability and operating cash flow are two important elements in the company's debt paying ability.

The ratio of total debt (TL/TA) and the ratio of long-term debt (LL/FA) are used as two criteria to evaluate the ability to pay the debts. In addition, to measure the profitability, the ratio of net profit (NP/TE) and operating profit (OP/TA) is used. The ratio cash flow to total asset of (NCFOP/TA) is used as a measure of company’s ability to produce cash flow on a regular basis.

Sub-hypotheses of hypothesis No 1:

No.1.1) There is a significant relationship between NCFOP/TA and TL/TA ratio.
No.1.2) There is a significant relationship between NCFOP/TA and LL/FA ratio.
No.1.3) There is a significant relationship between OP/TA and TL/TA ratio.
No.1.4) There is a significant relationship between OP /TA and LL/FA ratio.
No.1.5) There is a significant relationship between NP/TE and TL/TA ratio.
No.1.6) There is a significant relationship between NP/TE and LL/FA ratio.
2.8.3.1.1 Accounting Variables

To analyze these hypotheses the following accounting variables are below:

1) Debt Ratios ( TL/TA): *as a dependent variable*
2) The long-term debt on fix assets (LL/FA): *as a dependent variable*
3) Return on equity (NP/TE): *as an independent variable*
4) Operating profit on total assets (OP/TA): *as an independent variable*
5) Cash flow on Total Asset (NCFOP/TA): *as an independent variable*

1. Debt Ratios

The debt ratio compares a company's total debt to its total assets, which is used to gain a general idea as to the amount of leverage being used by a company. A low percentage means that the company is less dependent on leverage, i.e., money borrowed from and/or owed to others. The lower the percentage, the less leverage a company is using and the stronger its equity position. In general, the higher the ratio, the more risk that company is considered to have taken on. This ratio is generally computed by the following formula:

\[
\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}
\]

2. The long-term debt to fix assets:

The long-term debt to fixed assets indicates the proportion of the company’s assets that can be used as a support to pay long-term debt. This ratio is generally computed by the following formula:
Long-term debt to assets ratio = \frac{\text{Long – term debt}}{\text{Fixed asset}}

3. **Return on equity:**

Return on equity is the bottom line measure for the shareholders, measuring the profits earned for each dollar invested in the firm's stock. Return on equity is defined as follows:

\[ \text{ROE} = \frac{\text{Net Profit}}{\text{Total Equity}} \]

4. **Operating profit on total assets:**

Profitability ratios offer several different measures of the success of the firm at generating profits. This ratio is generally computed by the following formula:

\[ \text{Operating profit on total assets} = \frac{\text{Operation Profit}}{\text{Total Assets}} \]

5. **Cash flow to Total Asset:**

Net cash flow generated by operating activities is a measure of company’s ability to produce cash flow on a regular basis. Dividing this measure of cash flow by total assets is an indication of cash return on utilization of assets. This ratio is generally computed by the following formula:
Cash flow to total Assets = \( \frac{Net \text{ cash flow of operation activity}}{Total \text{ Assets}} \)

2.8.3.1.2 Data analysis of Hypothesis No 1:

The combination of time series and cross sectional data:

The data for any research if the field of accounting and financial may be essentially collected as follows:
A - Time series
B - Cross sectional
C – Combination of time series and Cross sectional (integrated)

In order to model the data relations, time series models and regression models are used for the first and second cases. However, in third case, most of the data contain cross sectional data that could be observed over the time. For example, it is possible to take the data of national costs and revenues of some countries for the research or information relating to investment, employment and capital of two companies during many years. Such information are known as panel data, combined in the form of time series and cross sectional data and studied by using Eviews software.

Panel data analysis like time series-cross-sectional analysis is under the effect of linear regression model pattern that the researcher has studied actively on the changes occurred over a certain period of time by repeated observations. The combination of time series and cross-sectional data lead to increase the quantity and quality of data and to do this, two important elements including the distance and size of data are very effective. A notable point is that, in this case, we are not to estimate a model for any section, because it is difficult and not compatible with the principle of scientific conservation. Therefore, we are looking for a suitable model using time series and cross-sectional data at the same time.
Panel data model formation:

Difference between Panel data regression and regular time series or cross-section regression is that Panel data regression has binary subtitles in its variables:

\[ y_{it} = \beta_0 + \beta_1 X_{it1} + \beta_2 X_{it2} + \ldots + \beta_k X_{ikt} + u_{it} \]

And, in vector, it is as follows:

\[ t = 1, \ldots, T \quad i = 1, \ldots, N; \quad y_{it} = X_{it}' \beta + u_{it} \]

That i represents the companies and t is the time. So, the subtitle of i shows the size of cross-section regression and t is the amount of time series. The vector \( \beta \) equals to \( k \times 1 \), the size of intercept and slope of independent variables and \( X_{it} \) shows it observation of independent variables. Most of Panel data applications use a one-way error component model for the error sentence, as

\[ u_{it} = \mu_i + v_{it} \]

in which, \( \mu \) represents the individual invisible effect and \( v \) the remaining of error sentences. The ratio of \( \mu \) to the time is fixed and explains each firm-specific effect not included in regression. In this case, it can be considered as the company's unobserved ability.

The remaining error sentence varies based on the time and person and it can be considered as a constant error of regression. A certain point of the difference between these models and regression models is the amount of \( \mu \) and the correlation and independence of this component and dependent variable.

To recognize by Chaw test, the question is which one is better, fixes effect model or integrated one is better? In other words, it tests the following hypothesis.

Ho: The integrated model is appropriate.
H1: Fixed effects model is appropriate.

a. Types of models used:

Fixed effect model

Here, it is assumed that \( \mu \) is the fixed parameters that must be estimated. The remaining of error sentences are random by independent \( v \) and IDD (\( \nu \), \( \sigma \nu \)) distributed alike. \( X_{it} \) is considered for the whole \( i \) and \( t \) independent of \( v \). Fixed effects model is an appropriate model when there is a correlation between \( X_{it} \) and \( \mu \) components.
Random effect model

As mentioned earlier, the hypotheses are assumed. But, in this case, it is assumed that there is no correlation between the components \(X_{it}\) and \(\mu\). They are independent and the component \(\mu\) is a part of the total error \(u\). So, THE random effects model is used.

Hausman Specification Test

In the example of production function, the correlation between the component and independent variables is doubtful. In fact, the question is that, in data analysis, which one is better fixed effects model or random effects model?

Houseman Test tests the following null and opposite hypothesis:

\[
\begin{align*}
H_0: & \quad E(u_{it} / X_{it}) = 0 \\
H_1: & \quad E(u_{it} / X_{it}) \neq 0
\end{align*}
\]

Ho: Random effects model is appropriate
H1: Fixed effects model is appropriate.

The statistic of the test is as follows:

\[
m = \hat{q}' [Var(\hat{q}')]^{-1} \hat{q}'
\]

\[
\hat{q}' = \hat{\beta}_{GLS} - \hat{\beta}_{within}
\]

The distribution of the above statistic is the distribution of \(K^2\) by freedom degrees - \(K\) is the number of independent variables.

2.8.3.2 Hypothesis No. 2

The selected Urban Co-operative banks in Pune have performed their duties satisfactorily.

Two common scales for evaluating the performance of outcome are the measurement of the assets and of equity returns. Corporate managers always are trying to increase the values in the market that is directly related to the purpose of increasing earnings per share.
Due to the lack of market prices for the banks under the study, it can be concluded that if the cooperative banks managers aim to maximize EPS and simultaneously ROE and ROA, they have done the best.

**Sub-hypotheses are as under:**

No.2.1) There is a significant relationship between EPS and ROA, ROE ratio.

No.2.2) There is a significant relationship between DPS and ROA, ROE ratio.

No.2.3) There is a significant relationship between CRAR and ROA, ROE ratio.

No.2.4) There is a significant relationship between TE/TA and ROA, ROE ratio.

**2.8.3.2.1 Accounting Variables**

To analyze this hypothesis the following accounting variables are below:

1) Profitability Ratios: *as dependent variables*

2) Earnings per share (EPS): *as an independent variable*

3) Dividends per share (DPS): *as an independent variable*

4) Capital adequacy ratio (CRAR): *as an independent variable*

5) Total equity on total asset (TE/TA): *as an independent variable*

**1. Profitability Ratios**

Profitability ratios offer several different measures of the success of the firm at generating profits.

**A. Return on assets (ROA):**

Return on assets is a measure of how effectively the firm's assets are being used to generate profits. It is defined as:

\[
\text{Return on asset} = \frac{\text{Net profit}}{\text{Total asset}}
\]
B. Return on equity (ROE):

Return on equity is the bottom line measure for the shareholders, measuring the profits earned for each dollar invested in the firm's stock. Return on equity is defined as follows:

\[
\text{Return on Equity} = \frac{\text{Net profit}}{\text{Total equity}}
\]

2. Shareholder ratios

The ratios explained to this point deal with the performance and financial condition of the company. These ratios provide information for managers (who are interested in evaluating the performance of the company) and for creditors (who are interested in the company’s ability to pay its obligations).

Earnings per share (EPS)

Earnings per share is the amount of income earned during a period for one share of common stock.

The earnings per share yield is defined as follows:

\[
\text{EPS} = \frac{\text{Net Profit}}{\text{Number of shares}}
\]
3. **Dividend Policy Ratios**

Dividend policy ratios provide insight into the dividend policy of the firm and the prospects for future growth. Two commonly used ratios are the dividend yield and payout ratio.

**Dividends per share (DPS)**

Dividend per share is the amount of cash dividends paid during a period, per share of common stock. The dividend yield is defined as follows:

\[
\text{DPS} = \frac{\text{Dividend paid}}{\text{Number of share}}
\]

2.8.3.2.2 **Data analysis of hypothesis No 2:**

Since the explanation for this research are the same as what researcher has presented on the title data analysis section hypothesis No 1, there is no need to write them here. The sharp reader can fairly understand and follow the explanation for this part.

2.8.3.3 **Hypothesis No. 3**

**The selected Urban Co-operative Banks are not professional organisations.**

To evaluate the professional performance of Cooperative Banks, Pearson correlation Test is used among variables measured in terms of growth. The reason is that if the Cooperative Banks have worked professionally, all aspects of banks performance are appropriate for the growth. Otherwise, they have grown inappropriately and hence nonprofessional.
2.8.3.3.1 Variables:

Variables used to check this hypothesis are defined and used as below:

1) Branches
2) Human resources
3) Membership of Banks
4) Deposits
5) Advances
6) Net profit
7) C.R.A.R

1. Branches:

Table 2.2 gives the branch-wise classification of the selected urban co-operative Banks in Pune city.

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<td>Extn counters</td>
<td>Extn counters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2006-07</td>
<td>65</td>
<td>105</td>
<td>37</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>2007-08</td>
<td>77</td>
<td>153</td>
<td>37</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>2008-09</td>
<td>88</td>
<td>175</td>
<td>37</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>2009-10</td>
<td>96</td>
<td>206</td>
<td>37</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>2010-11</td>
<td>106</td>
<td>216</td>
<td>37</td>
<td>17</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Annual Reports of concerned Urban Co-operative Banks, Pune
2. Human Resources:

Human resources play an important role in the growth of the bank. Banking operations are now specialized in functions requiring totally professional work force. Naturally availability of efficient staff is a prime concern in Human Resource Management. Another HR anxiety is training and updating employees in performing services. Proper training helps employees to boost their efficiency and productivity.

Human-resource-wise classification of selected urban co-operative banks in Pune is given in Table 2.3.

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<tbody>
<tr>
<td></td>
<td>Increase %</td>
<td>Increase %</td>
<td>Increase %</td>
<td>Increase %</td>
<td>Increase %</td>
<td>Increase %</td>
</tr>
<tr>
<td>1</td>
<td>2006-07</td>
<td>1571 100</td>
<td>225 100</td>
<td>672 100</td>
<td>227 100</td>
<td>107 100</td>
</tr>
<tr>
<td>2</td>
<td>2007-08</td>
<td>1670 6.30</td>
<td>2834 25.89</td>
<td>780 16.07</td>
<td>230 1.32</td>
<td>120 12.14</td>
</tr>
<tr>
<td>3</td>
<td>2008-09</td>
<td>1465 6.74</td>
<td>2904 29</td>
<td>851 26.63</td>
<td>245 7.92</td>
<td>120 12.14</td>
</tr>
<tr>
<td>4</td>
<td>2009-10</td>
<td>1670 6.30</td>
<td>2910 29.27</td>
<td>908 35.11</td>
<td>267 17.62</td>
<td>120 12.14</td>
</tr>
<tr>
<td>5</td>
<td>2010-11</td>
<td>1812 15.34</td>
<td>2911 29.27</td>
<td>876 30.35</td>
<td>288 26.87</td>
<td>121 12.14</td>
</tr>
</tbody>
</table>

Source: Annual Reports of concerned Urban Co-operative Banks, Pune
3. **Membership of Banks**:

Membership of Banks wise classification of selected urban co-operative banks in Pune is given in Table 2.4.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Year</th>
<th>No. of members</th>
<th>Increase %</th>
<th>No. of members</th>
<th>Increase %</th>
<th>No. of members</th>
<th>Increase %</th>
<th>No. of members</th>
<th>Increase %</th>
<th>No. of members</th>
<th>Increase %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2006-07</td>
<td>45566</td>
<td>100</td>
<td>123169</td>
<td>100</td>
<td>100541</td>
<td>100</td>
<td>12349</td>
<td>100</td>
<td>6495</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>2007-08</td>
<td>50473</td>
<td>10.78</td>
<td>126174</td>
<td>2.43</td>
<td>100772</td>
<td>0.22</td>
<td>13432</td>
<td>8.78</td>
<td>6516</td>
<td>0.32</td>
</tr>
<tr>
<td>3</td>
<td>2008-09</td>
<td>52637</td>
<td>15.51</td>
<td>129741</td>
<td>5.33</td>
<td>108948</td>
<td>9.78</td>
<td>14213</td>
<td>15.05</td>
<td>6543</td>
<td>0.73</td>
</tr>
<tr>
<td>4</td>
<td>2009-10</td>
<td>56160</td>
<td>23.24</td>
<td>134417</td>
<td>9.13</td>
<td>115584</td>
<td>10.49</td>
<td>15360</td>
<td>24.38</td>
<td>7143</td>
<td>10.02</td>
</tr>
<tr>
<td>5</td>
<td>2010-11</td>
<td>60968</td>
<td>33.80</td>
<td>162560</td>
<td>31.98</td>
<td>123981</td>
<td>23.31</td>
<td>15622</td>
<td>26.50</td>
<td>7187</td>
<td>10.65</td>
</tr>
</tbody>
</table>

Source: Annual Reports of concerned Urban Co-operative Banks, Pune

4. **Deposits**:

The collection of deposits and disbursement of loan advances are twin functions of the bank. Table 2.5 indicates comparative position of the selected UCBs in respect of Deposit Mobilization.
Table 2.5
Deposit wise classification of selected Urban Co-operative Banks

(‘ Crores)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Increase %</td>
<td>Increase %</td>
<td>Increase %</td>
<td>Increase %</td>
<td>Increase %</td>
</tr>
<tr>
<td>1</td>
<td>2006-07</td>
<td>4265.55</td>
<td>100</td>
<td>8924.84</td>
<td>100</td>
<td>1568.11</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>379.87</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>114.32</td>
</tr>
<tr>
<td>2</td>
<td>2007-08</td>
<td>5342.66</td>
<td>25.25</td>
<td>11430.82</td>
<td>28.08</td>
<td>2172.18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>398.12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>123.93</td>
</tr>
<tr>
<td>3</td>
<td>2008-09</td>
<td>6656.41</td>
<td>56.06</td>
<td>12918.85</td>
<td>44.75</td>
<td>2445.59</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>495.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>114.30</td>
</tr>
<tr>
<td>4</td>
<td>2009-10</td>
<td>7212.96</td>
<td>69.09</td>
<td>14266.73</td>
<td>54.86</td>
<td>2822.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>696.88</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>165.02</td>
</tr>
<tr>
<td>5</td>
<td>2010-11</td>
<td>9136.66</td>
<td>114.20</td>
<td>15800.96</td>
<td>77.05</td>
<td>3316.91</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>428.23</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>181.91</td>
</tr>
</tbody>
</table>

Source : Field Work

5. Advances:

The bank always attempt to attract large borrowers/corporate. But there are several risks including credit risk, market risk and post disbursal credit risk. The details of advances disbursed by selected urban co-operative Banks are given in Table 2.6.
### Table 2.6

Advances wise classification of selected Urban Co-operative Banks

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Increase %</td>
<td>Increase %</td>
<td>Increase %</td>
<td>Increase %</td>
<td>Increase %</td>
</tr>
<tr>
<td>1</td>
<td>2006-07</td>
<td>2448.38</td>
<td>100</td>
<td>1166.87</td>
<td>100</td>
<td>252.29</td>
</tr>
<tr>
<td>2</td>
<td>2007-08</td>
<td>3200.71</td>
<td>30.71</td>
<td>1226.26</td>
<td>5.14</td>
<td>1265.77</td>
</tr>
<tr>
<td>3</td>
<td>2008-09</td>
<td>3896.54</td>
<td>59.15</td>
<td>1277.69</td>
<td>9.51</td>
<td>1542.74</td>
</tr>
<tr>
<td>4</td>
<td>2009-10</td>
<td>464.66</td>
<td>88.76</td>
<td>2754.79</td>
<td>136.19</td>
<td>1789.67</td>
</tr>
<tr>
<td>5</td>
<td>2010-11</td>
<td>6384.27</td>
<td>160.78</td>
<td>119.91</td>
<td>4.03</td>
<td>2246.10</td>
</tr>
</tbody>
</table>

**Source:** Annual Reports of concerned Urban Co-operative Banks, Pune

---

6. **Profit:**

Profit is an indication of success of the bank. Table 2.7 indicates the comparative position of UCBs in respect of profit earned by them during the period 2006-07 to 2010-11.
Table 2.7
Profit wise classification of selected Urban Co-operative Banks

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2006-07</td>
<td>60.32</td>
<td>155.18</td>
<td>-30.56</td>
<td>2.89</td>
<td>1.22</td>
</tr>
<tr>
<td>2</td>
<td>2007-08</td>
<td>72.93</td>
<td>202.26</td>
<td>7.76</td>
<td>3.11</td>
<td>2.35</td>
</tr>
<tr>
<td>3</td>
<td>2008-09</td>
<td>90.48</td>
<td>210.79</td>
<td>22.39</td>
<td>4.80</td>
<td>3.58</td>
</tr>
<tr>
<td>4</td>
<td>2009-10</td>
<td>55.37</td>
<td>119.67</td>
<td>19.37</td>
<td>6.32</td>
<td>3.10</td>
</tr>
<tr>
<td>5</td>
<td>2010-11</td>
<td>111.13</td>
<td>212.26</td>
<td>27.85</td>
<td>4.30</td>
<td>2.64</td>
</tr>
</tbody>
</table>

Source: Annual Reports of concerned Urban Co-operative Banks, Pune

7. C.R.A.R.

The Capital to Risk weight Asset Ratio (CRAR) is the parameter of the growth in the Bank’s own funds. CRAR prescribed by the RBI is 9%. Table 2.8 indicates that these 5 selected UCBs are trying to maintain CRAR at the level prescribed by the RBI.

Table 2.8
C.R.A.R wise classification of selected Urban Co-operative Banks

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2006-07</td>
<td>12.36%</td>
<td>10.85%</td>
<td>18.41%</td>
<td>11.94%</td>
<td>11.37%</td>
</tr>
<tr>
<td>2</td>
<td>2007-08</td>
<td>12.13%</td>
<td>10.92%</td>
<td>14.63%</td>
<td>11.87%</td>
<td>10.85%</td>
</tr>
<tr>
<td>3</td>
<td>2008-09</td>
<td>12.50%</td>
<td>14.63%</td>
<td>14.47%</td>
<td>12.63%</td>
<td>10.92%</td>
</tr>
<tr>
<td>4</td>
<td>2009-10</td>
<td>12.32%</td>
<td>12.74%</td>
<td>15.47%</td>
<td>13.02%</td>
<td>14.63%</td>
</tr>
<tr>
<td>5</td>
<td>2010-11</td>
<td>12.03%</td>
<td>10.85%</td>
<td>15.94%</td>
<td>14.09%</td>
<td>12.74%</td>
</tr>
</tbody>
</table>

Source: Annual Reports of concerned Urban Co-operative Banks, Pune
2.8.3.3.2 Data analysis

The data analysis of hypothesis is as under:

The step of data analysis of hypotheses No. 3:

a. Null hypothesis and Opposite hypothesis

**Ho:** The selected Urban Co-operative Banks are professional organisations.

**H1:** The selected Urban Co-operative Banks are not professional organisations.

For testing this hypothesis, the researcher used the Kolmogorov-Smirnow test.

b. Kolmogorov -Smirnov Test:

Kolmogorov-Smirnov Test which is named in honor of two Russian statistician. A.N. Kolmogorov and A.N. Smirnov, is a simple non-parametric method used for determining the homogeneity of experimental data by statistical distributions selected. Thus, Kolmogorov-Smirnov Test named as Ks, is a way to comply a theoretical distribution on experimental data.

In Ks Test, the null hypothesis to be tested is that distribution of observations, is a certain distributions (by certain parameters) suggested by many different thoughts evidences. Distribution of observations is in agreement with the certain observations.

c. Correlation

Correlation is a scale for linear relationship. When the main objective of the researcher is to study the relationship between two random variables, the correlation coefficient can be used. Data set containing x and y in a sample of n experimental subjects can be considered as a random sample of two variables (x1 and y1), . . . , (Xn and Yn) in which different pairs are independent, and then, to arrange a study of the relationship between the variables by correlation analysis.

Numerical scale of the relationship between two variables is called Sample Correlation Coefficient or Pearson Momentum of Correlation Coefficient. Sample correlation coefficient r is given as follows:
\begin{equation}
    r = \frac{\sum_{i=1}^{n}(x_i - x^-)(y_i - y^-)}{\sqrt{\sum_{i=1}^{n}(x_i - x^-)^2} \sqrt{\sum_{i=1}^{n}(y_i - y^-)^2}}
\end{equation}

Where \((x_1, y_1), \ldots, (x_n, y_n)\), are \(n\) pairs of observations.

The statistic \(r\) is the same as sample correlation coefficient \(\rho\). The correlation coefficient is defined as follows:

\[ \rho = \text{Corr}(x, y) = \frac{\text{Cov}(x, y)}{\delta_x \delta_y} \]

So, the sample correlation coefficient \(r\) can be used as an estimator of the society correlation coefficient, i.e., \(\rho\).

### 2.8.3.4 Hypothesis No.4

**There is a need for co-operative banks in India vis-a-vis in Pune city due to customers need.**

#### 2.8.3.4.1 Population

Data needed for this hypothesis is gathered through questionnaire. The population includes **Members, Chairman/Director** and **Officer of Bank in co-operative banks**.

The selection of the Directors, officers and members is done on the basis of the following conditions.

1. **Directors**:

   The researcher has selected 5 Directors on the basis of purposive sampling method from each of five UC Banks in Pune. Total sample size of Directors is 25. The group of five Directors from each bank consists of one Chairman, one Vice Chairman, one Director mostly female, one Managing Director and another Director in the capacity of staff representative.

2. **Officers**:

   10 officers are selected out of five UC Banks. Total size of sample is 50. These officers represent different sections.
3. **Members**:

The members are innumerable. Following the principle of convenience, the researcher has selected 25 members from each of 5 banks from the members present in a bank on the day of visit of the researcher.

<table>
<thead>
<tr>
<th>Sr.no.</th>
<th>Name of Urban co-op. Bank</th>
<th>Directors</th>
<th>Officers</th>
<th>Members</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>Selected</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td>Cosmos co-op. Bank</td>
<td>15</td>
<td>5</td>
<td>73</td>
</tr>
<tr>
<td>2</td>
<td>Saraswat co-op. Bank</td>
<td>15</td>
<td>5</td>
<td>60</td>
</tr>
<tr>
<td>3</td>
<td>Janata co-op. Bank</td>
<td>18</td>
<td>5</td>
<td>68</td>
</tr>
<tr>
<td>4</td>
<td>Vishweshwar co-op. Bank</td>
<td>18</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td>5</td>
<td>Shri Sharada co-op. Bank</td>
<td>17</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>83</td>
<td>25</td>
<td>252</td>
</tr>
</tbody>
</table>

**Source**: Annual Reports of Selected Urban Co-op Banks, Pune.

### 2.8.3.4.2 Sample Size

According to limitations and to be extensive of population, sample size is calculated as under:
Samples Size \( N = \left[ Z_{1-\frac{\alpha}{2}} \right]^2 \frac{PQ}{\varepsilon^2} \)

\[ = [1.96]^2 \times 0.25 / (0.1)^2 \]

\[ = 96.04 \approx 97 \]

Where,

\( PQ = 0.25 \)

\( \alpha = 0.05 \)

\( \varepsilon = \text{error} = 0.1 \)

In the above formula, the random quantity of X is quality and population variance is not known. Variances are between 0 and 0.25.

Finally the total of 200 copies of the questionnaire has been distributed to population.

### 2.8.3.4.3 Measurement of Scale

As mentioned earlier, for each question contained in the questionnaire, five choices of answers are given to the respondents. The scale of this measuring is explained with scale such as Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree.

### 2.8.3.4.4 Data Analysis

In this study, 22 questions (Q.No.1-22) in questionnaire with special reference to Members (Q.No.1-9), Officer (Q.No.10-17) and Chairman/Director (Q.No.18-22) of Bank of co-operative banks would be considered and tested and also may be proved by t-student test.

Questions are:

Q1) I clearly understand the service standards (service procedures, rules, and regulations) in the service delivery process.

Q2) The service standards in the service delivery process reflect are based on my expectation.

Q3) There are clear procedures through which clients can complain about discourteous staff.

Q4) Do you agree that the organization is giving quality (defect free) services?

Q5) Do you believe that cost for the services is reasonable?
Q6) Do you think that interest rate of bank is improper?
Q7) The service pricing system example (interest rate) allows customers to participate so as to consult their capacity to pay.
Q8) Customer needs and expectations are properly communicated to customer before decisions are made on different service aspects.
Q9) There is a systematic customer complaint handling mechanism.
Q10) There are clearly stipulated service standards for each service type.
Q11) The organization made the service standards (the procedures, rules and regulations of the services) known to its customers.
Q12) We usually conduct customer needs assessment to proactively determine their requirement.
Q13) Transparent complaint handling system is currently available and made known to customers.
Q14) Our organization uses responsive approach to management to fit the changing customers’ needs.
Q15) The current organizational structure is conducive that enables to closely look at its customers.
Q16) The relative cost for the following services (Saving Deposit, Loan, Re-payment, Transfer of payment) does not seem reasonable and affordable.
Q17) I believe that authority is adequately devolved to concerned branches to improve service delivery.
Q18) I clearly know that there are standards as to how I should serve customers.
Q19) The service standards are set based on customer needs and expectations.
Q20) Adequate training is usually given to improve service delivery.
Q21) There is transparent promotion policy implemented fairly and consistently.
Q22) I am fully authorized to make appropriate decision to effectively solve customer problems.
Testing methodology of hypotheses No. 4 is as under:

**Single-sample Mean Comparison Test**

Whenever the aim is to compare a variable or a sample by constant value, the test of T - student can be used. In this case, the assumption of normality is required (though the sample size is greater than 30, based on the central limit theorem, the distribution will be approximately normal). Different stages of testing the hypothesis are as follows:

a. **Null hypothesis and Opposite hypothesis**

\[H_0: \mu \leq \mu_c\]

\[H_1: \mu > \mu_c\]

b. **Statistics function**

The function of test statistic is defined as follows:

\[
t = \frac{\bar{X} - \mu_c}{\frac{S}{\sqrt{n}}}
\]

In the test statistic, X and S are the mean and standard deviation, and n are the amount and number of the sample, respectively. According to the central limit theorem when the size of sample is large (30 <n), the test statistic has a standard normal distribution.

c. **Error rate**

Error rate Type 1 or alpha is assumed 0.05. That is, its confidence level will be 95%.
d. **H0 rejection and acceptance Region**

According to the above (Distribution statistics and error rate), the regions of rejecting and accepting the null hypothesis would be as follows:

![Diagram showing rejection and acceptance regions for H0]

- **Not rejection** (H0)
- **Rejection** (H0)

1.64

**Judgement:**

If the absolute value of t is in the rejection region of H0, that is, where its absolute value is greater than the critical value (1.64 for the confidence level 95%), the null hypothesis will be rejected.

2.9 **Limitations of the Study**

Pune city is a developed city. It is hub of education. It is now known as I.T. center. These urban co-operative banks have played a major role in socio-economic developments on Pune city. Major limitations of the study are as given below:

1. In accounting, there are some methods and ways to prepare the financial statements that their impact on financial statement is not the same. It may be caused improper to generalize the result of research to the statistical population.
2. The study concentrates on the functioning of the selected urban co-operative banks in Pune city.
3. The banking activities of these selected urban co-operative Banks are highlighted.
4. The duration of study is for 5 years from 2006 to 2011.
5. The sample is selected only from selected five UCBs.
6. The study is limited to Pune city only.

2.10 Chapter Scheme

The thesis is divided into six chapters.

1. First chapter is introduction.

2. Second chapter gives Research Methodology.

3. Third chapter deals with history of Urban Co-operative Banks.

4. Fourth chapter highlights Geo-Physical. Features and socio economic aspects of Pune District.

5. Fifth chapter Comparative analysis of the performance of selected Urban Co-operative Banks in Pune City.

6. Analysis & Interpretation of Data.

7. Last chapter is giving findings and suggestions.
References


