4.1 Introduction

Research methodology involves the learning of the various techniques that the researcher uses in the conduct of research and in the conduct of tests, experiments, surveys and critical studies. Research methodology paves the way to conduct research methods properly. Research methodology is the beginning whereas research methods are the end of any scientific or non-scientific research.

Research methods refer to techniques and procedures used to obtain and analyse data. This therefore includes questionnaires, observation and interviews as well as both quantitative (statistical) and qualitative (non-statistical) analysis.

Research Objective of this thesis

The objective of this study was to examine critically the working, progress, and performance of Crop Loan and Crop Insurance Scheme in Pune District, and in light of empirical data suggest ways and means for more effective implementation of the scheme so as to fulfill its social and economic objective.

4.2 Meaning of Research

Research in common terminology refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. Research is an art of scientific investigation. The Advanced Learner’s Dictionary of Current English lays down the meaning of research as “a careful investigation or inquiry especially through search for new facts in any branch of knowledge.” Redman and Mory define research as a “systematised effort to gain new knowledge.” Research is actually a voyage of discovery. We all possess the vital instinct of inquisitiveness. This inquisitiveness is the mother of all knowledge and the method, which the
researcher employs for obtaining the knowledge of whatever the unknown, can be termed as research.

Research is an academic activity. According to Clifford Woody, research comprises defining and redefining problems, formulating Hypothesis or suggested solutions; collecting, organizing and evaluating data; making deductions and reaching conclusions; and at last carefully testing the conclusions to determine whether they fit the Formulating hypothesis. D. Slesinger and M. Stephenson in the Encyclopedia of Social Sciences define research as “the manipulation of things, concepts or symbols for the purpose of generalizing to extend, correct or verify knowledge, whether that knowledge aids in construction of theory or in the practice of an art.” Research is, thus, an original contribution to the existing stock of knowledge making for its advancement. It is the pursuit of truth with the help of study, observation, comparison and experiment. The search for knowledge through objective and systematic method of finding solution to a problem is research. The term ‘research’ refers to the systematic method consisting of enunciating the problem, formulating a hypothesis, collecting the facts or data, analyzing the facts and reaching certain conclusions either in the form of solutions(s) towards the concerned problem or in certain generalisations for some theoretical formulation.

4.3 Types of Research

The basic types of research are:

**Descriptive vs. Analytical**

Descriptive research includes surveys and fact-finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs, as it exists in the present. In social science and business research, we quite often use the term *Ex post facto research* for descriptive research studies. The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening. Most *ex post facto research* projects are used for descriptive studies in which the researcher seeks to measure such items as, for example, frequency of shopping, preferences of people, or similar data. The methods of
research utilised in descriptive research are survey methods of all kinds, including comparative and co relational methods. In *analytical research*, on the other hand, the researcher has to use facts or information already available, and analyse these to make a critical evaluation of the material.

**Applied vs. Fundamental**

Research can either be applied (or action) research or fundamental (to basic or pure) research. *Applied research* aims at finding a solution for an immediate problem facing a society or an industrial/business organisation, whereas *fundamental research* is mainly concerned with generalizations and with the formulation of a theory.

**Quantitative vs. Qualitative**

Quantitative research is grounded on the measurement of quantity or amount. It is applicable to phenomena that can be articulated in terms of quantity. Qualitative research, on the other hand, is concerned with qualitative phenomenon, i.e., phenomena relating to or involving quality or kind.

**Conceptual vs. Empirical**

Conceptual research is that related to some abstract idea(s) or theory. Philosophers and thinkers generally use it to develop new concepts or to reinterpret existing ones. Empirical research relies on experience or observation alone, often without due regard for system and theory. It is data based research, coming up with conclusions, which are capable of being verified, by observation or experiment.

**Some Other Types of Research**

All other types of research are variations of one or more of the above stated approaches, based on either the purpose of research, or the time required to accomplish research, on the environment in which research is done. Form the point of view of time, we can think of having research either as *one-time research* or *longitudinal research*. In the former case, the research is confined to a single time-period as is the case with the research for this thesis, whereas in the latter case the research is carried on over several time-
periods. The research may be *exploratory* or it may be formalised. The objective of exploratory research is the development of hypotheses rather than their testing, whereas formalised research studies, as is the case with research for this thesis, are those with substantial structure and with specific hypotheses to be tested. *Historical research*, which this thesis uses for secondary data collection, is that which utilizes historical sources like documents, remains, etc. to study events or ideas of the past, including the philosophy of persons and groups at any remote point of time.

**Research Approaches**

The above description of the types of research establishes that there are two basic approaches to research - quantitative approach and the qualitative approach. The former involves the generation of data in quantitative form, which can be subjected to rigorous quantitative analysis in a formal and rigid fashion.

*Qualitative approach* to research is concerned with subjective assessment of attitudes, opinions and behavior. Research in such a situation is a function of researcher’s insights and impressions. Such an approach to research generates results either in non-quantitative form or in the form, which are not subjected to rigorous quantitative analysis, as is the case with the research for this thesis. Generally, the techniques of focus group interviews, projective techniques and depth interviews are used.

The researcher has used the Qualitative approach to research for this thesis, using descriptive research methods. The idea behind this type of research is to study frequencies, percentages, averages, and other statistical calculations.

Much of research work is concerned with the way in which the researcher collects data to answer the research questions or hypotheses. It is not unusual to begin thinking about the research by considering whether to, for example, administer a questionnaire or conduct interviews. Thoughts on this question belong in the centre of the research ‘onion’, by which means Saunders et al have chosen to depict the issues underlying the choice of data
collection techniques and analysis procedures in Figure below. Before coming to this central point Saunders et al argue that there are important layers of the onion that need to be peeled away. The onion has six layers:

- Philosophies
- Approaches
- Strategies
- Choices
- Time Horizons
- Techniques and procedures

Figure 1: The research ‘onion’

My research Philosophy

Research philosophy is primarily concerned with:

- Ontology – the nature of reality
- Epistemology – the nature of knowledge and how it is acquired
- Axiology – judgments about the role of values

96
Crop Loan or Crop Insurance is dependent upon the outlook and needs of the individuals or groups affected. My contention is that this suggests that a positivist approach is appropriate for some elements of my research while an interpretivist approach is appropriate for other elements of my research.

I note that the individuals or groups affected by the farming activities are also situated in historical and cultural contexts, which influence their actions with regard to crop loan and insurance and their value to them.

**My Research Approach**

There are two main research approaches: deduction and induction. With deduction, a theory and hypotheses are developed and a research strategy designed to test the hypothesis. With induction, data are collected and a theory developed as a result of the data analysis. I have applied the deductive approach for my research.

![Figure 2: Research Approaches](image)

**My Research Strategy**

I have used Survey strategy for my thesis. The survey strategy is usually associated with the deductive approach. It is a popular and common strategy in business and management research and is most frequently used to answer who, what, where, how much and how many questions. It therefore tends to be used for exploratory and descriptive research. Surveys are popular as they
allow the collection of a large amount of data from a sizeable population in a highly economical way. Often obtained by using a questionnaire administered to a sample, these data are standardized, allowing easy comparison. In addition, the survey strategy is perceived as authoritative by people in general and is both comparatively easy to explain and to understand.

The survey strategy has allowed me to collect qualitative data, which I have analyzed quantitatively using descriptive and inferential statistics. The data collected using a survey strategy can help suggest possible reasons for particular relationships between variables and to produce models of these relationships. Using a survey strategy should give more control over the research process and, when sampling is used, it is possible to generate findings that are representative of the whole population at a lower cost than collecting the data for the whole population. I spent time ensuring that my sample is representative, designed and piloted my data collection instrument and have tried to ensure a good response rate.

The data collected by the survey strategy is unlikely to be as wide-ranging as those collected by other research strategies are\textsuperscript{103}. For example, there is a limit to the number of questions that any questionnaire can contain if the goodwill of the respondent is not to be presumed on too much.

My main method of data collection is the ‘Survey’ method.

- The survey method is usually associated with the deductive approach – surveys are “experiments”.
- It allows the collection of a large amount of data from a sizeable population in a highly economical way.
- It is often conducted on questionnaire to answer those ‘What’ and ‘How’ questions. Its data are standardized and so allow easy comparison.
- It gives you more control over the research process; however, it takes time to design and pilot a good questionnaire.
My Research Choice

I have used mixed model research and have quantitised my qualitative data from questionnaire responses, converting it into numerical codes so that it can be analyzed statistically. I have used dichotomous questions - ‘Yes’/’No’ - and category questions for obtaining responses.

‘Mixed methods’ is the general term for when both quantitative and qualitative data collection techniques and analysis procedures are used in a research design – Figure below. It is subdivided into two types. Mixed method research uses quantitative and qualitative data collection techniques and analysis procedures either at the same time (parallel) or one after the other (sequential) but does not combine them.

![Research Choices Diagram]

Figure 3: Research Choices

This means that, although mixed method research uses both quantitative and qualitative worldviews at the research methods stage, quantitative data are analyzed quantitatively and qualitative data are analyzed qualitatively. In addition, often either quantitative or qualitative techniques or procedures predominate. In contrast, mixed model research combines quantitative and qualitative data collection techniques and analysis procedures as well as combining quantitative and qualitative approaches at other phases of the research such as research question generation. This means that I may take quantitative data and qualitise it that is, convert it into narrative that can be analyzed qualitatively. Alternatively, one may quantitise the qualitative data, converting it into numerical codes so that it can be analyzed statistically.
My Research Time Horizon

My research is a snapshot taken during period 2003 –2004 to 2007- 2008, for which I have collected crop loan and crop insurance data from secondary sources. A snapshot time horizon is called cross-sectional study because my research project is necessarily time constrained. Cross- sectional studies often employ the survey strategy, like I have done for my research.

4.4 Credibility of My Research Findings

Every research design faces the issue of the credibility of research findings and my research is no exception to this. I have paid attention to two particular emphases on research design: reliability and validity.

Reliability

Reliability refers to the extent to which my data collection techniques or analysis procedures will yield consistent findings. It can be assessed by posing the following three questions

(Easter by-Smith et al., 2002:53 in Saunders et al)\textsuperscript{looxxv}:  

- Will the measures yield the same results on other occasions?  
- Will other observers reach similar observations?  
- Is there transparency in how sense was made from the raw data?

Validity

Validity is concerned with whether the findings are really about what they appear to be about. Is the relationship between two variables a causal relationship?

A concern one may have in the design of research is the extent to which one’s research results are \textit{generaliseable}: that is, whether the findings may be equally applicable to other research settings, such as other organizations. This may be a particular worry if one is conducting case study research in one organization, or a small number of organizations. It may also be important if the organization is markedly ‘different’ in some way.
Identification of the research population

This is similar to the point made about generalisability above. My research’s intention is to be able to generalize the conclusions across the whole population (All farmers in Pune District, possibly all farmers in Maharashtra and India).

4.5 Data collection

It is logical to assume that the way I have collected my data is going to yield valid data Collection. The data for the fulfillment of the objectives of this study was collected from primary as well as secondary resources.

Library research


I first read the book of Choubey B.N. “Institutional Finance for Agricultural Development” to get the idea of the “three tier cooperative banking system and their functions, particularly of the Central Co-operative Bank.”

The next most important document which I read was the “Annual Credit Plans” of Pune District from 2003-04 to 2007-08. They gave the information of the total Credit Plan for the district and its break up as follows:

All sectors – Block (Taluka) wise
Agricultural sector - Block wise
Allied sector- Block wise
Government programmes- Block wise
2.1. All sectors – Bank wise
2.2. Agricultural sector - Bank wise
2.3. Allied sector- Bank wise
2.4. Government programmes- Bank wise
3.1. Activity wise- Bank wise
3.1.1. Minor Irrigation.
3.1.2. Land Development
3.1.3. Farm Mechanization
3.1.4. Plant and Horticulture
3.1.5. Crop Loan
3.1.6. Dairy development
3.1.7. Poultry Farm
3.1.8. Sheep, Goat rearing
3.1.9. Non-farm Sector
3.1.10. Non-priority sector Total plan

The above data is also given

Activity wise - Block (taluka) Wise

From the above information I have taken the data relating to -
1. Amount of Total plan
2. Target Amount for Agriculture
3. Target amount for Crop loan

Mainly relating to Pune District Central Cooperative Bank, since my topic is related to the implementation of crop loan scheme by Pune District Central Cooperative Bank.

The above data was supplemented by the statistical information got from Pune District Central Cooperative Bank relating to data on

I. Number of Primary Agricultural credit societies in Pune District from 2003 to 2008.
II. Number of members of Primary Agricultural credit societies in Pune District.
III. Number of borrowers, out of total members of Primary Agricultural credit societies in Pune District
IV. Area under cultivation of the borrower members
V. Target of crop loan and disbursement of crop loan by Primary Agricultural credit societies in Pune District

With the help of this information I was able to find out whether there was increase in area under cultivation, membership of Primary Agricultural credit societies, & their growth rates. This was necessary to prove the hypothesis (the detailed analysis of this is given in chapter 8)
The handbook of "Agriculture loan policy", published by Pune District central Cooperative Bank helped me to know scale of finance for each crop, and the changes in it from 2003 to 2008 (the detailed analysis of this is given in chapter 3). The hand book also mentions the policies of Pune District Central Cooperative Bank relating to the procedure of getting crop loan. To get the idea of RBI’s view point of the Crop Loan scheme I read “Manual on Production Oriented System of Lending for Agriculture Published by RBI”. For information on the area under different crops in different talukas of Pune District, I referred to the “Socio Economic Abstract of Pune District” from 2003 to 2008 and the “Crop and Season Report” Published by Commissioner of Agriculture.

I also read the report of “Agriculture Finance Sub Committee (Gadgil Committee) & the “Report of Crop Loan Evaluation Committee (Karve Committee)”. Apart from this, review of Literature was done by referring to different books and articles relating to Crop Loan and Crop Insurance policy (detailed explanation is given in chapter 3)

**Field research (Sample Survey)**

In order to assess the impact of Crop Loan, the field survey was done, for this first, the decisions relating to the following three aspects was taken

a) Choice of the crops for the survey  
b) Selection of the area for the survey  
c) Method to be adopted in selection of cultivators for the survey

**a) Choice of the crops:**

Since the study is related to the implementation of the Crop Loan by Pune District Central Cooperative Bank., firstly I obtained “the data from Pune District Central Cooperative Bank, about the crops to which the crop loan is given. It was found that the crop loan was given for the following eight crops” (though the handbook on Agriculture Loan Policy, has mentioned scale of finance for 25 crops)

1. Sugarcane  
2. Tomato  
3. Onion
4. Potato
5. Rice
6. Groundnut
7. Grapes
8. Bajra

Since the crop loan given for Bajra crop is very negligible, it was not included in the sample survey. In other words, the sample survey was done of only the first seven crops.

b) Selection of the area

The places (from different Talukas) selected for each crop was based on the area under cultivation (out of the total area for that crop in the District) and the amount of crop loan given for that crop (out of the total crop loan given for that crop in the District). The study of this place would thus safely be expected to give a representative picture for the district as the whole thus the places selected crop wise were as follows

1. **The Bagayat region**12 (consist of Indapur, Baramati & Daund Talukas). It has large area under irrigation and is suitable for the production of sugarcane, grapes and onion. The sample survey for sugarcane crops was done from two societies from Indapur and two societies from Baramati.

2. **The Jirayat region**12 (consists of Junnar, Ambegaon, Khed, Sirur, and Purandar Talukas) this region is suitable for the production of Grapes, Tomato, Potato, Groundnut, Onion and Rice. The sample survey was done of two societies from Otur for Tomato (Junnar Taluka), two societies from Narayangaon for Grapes (Junnar Taluka), two societies from Peth for Potato (Ambegaon Taluka), two societies from Khed for Groundnut (Khed Taluka), and two societies from Bhaul for Onion (Khed Taluka).

3. **The Hilly Region**12 (consisting of Maval, Mulshi, Bhor and Velhe Talukas) these areas have a very high altitude (500 to 1000 mts), rocky and dilated terrain, heavy rainfall, and red soil, humid and temperate climate. The area under irrigation is very less. This region is suitable for the cultivation of Rice. The sample survey was done from two societies from Paud for Rice crop (Mulshi Taluka).
From each Primary Agricultural Credit Society 30 borrowing members (comprising of 15 small farmers called as “Durbal”, having land holding of less than 5 hectar, and 15 large farmers called as “Sabal” having land holding of more than 5 hectares) and 10 non-borrowing members (5 small farmers and 5 large farmers) from the same Primary Agricultural Credit Society were selected on random basis. The Questionnaire filled from these members related to size of holding, educational level, cropping pattern, source of irrigation, cultural practices (use of HYV seeds, fertilizers, pesticides etc after obtaining crop loan), place of sale of product, products for which crop insurance is taken.

The questionnaire was also filled from the Secretary of Primary Agricultural Credit Society to find out the year of establishment of the society, the total number of members, their breakup into small and large farmers, the amount of crop loan given by the society from 2003-04 to 2007-08.

Thus the Primary survey was based on the information obtained from total of 640 individual farmers, for 7 different crops, from different regions of Pune Districts.

The survey collected information about the cropping pattern, and the impact of Crop Loan on the yield, output and the income of the farmers.

**Data interpretation**

It is here that there is probably the greatest danger of logic leaps and false assumptions. I am using a theoretical framework against which I will analyse my data. I am working deductively (from theory to data), which framework has given rise to the hypothesis that I am testing in my research.

**Sample selection**

Whatever the research question(s) and objectives the researcher will need to consider whether there is need to use sampling. Occasionally it may be possible to collect and analyse data from every possible case or group member; this is termed a census. However, for many research questions and objectives, it will be impossible for me either to collect or to analyse all the data available to me owing to restrictions of time, money and often access. Sampling techniques provide a range of methods that enable the researcher
to reduce the amount of data needed to collect by considering only data from a subgroup rather than all possible cases or elements – Figure below. Some research questions will require sample data to generalise about all the cases from which the sample has been selected.

Figure 4: Population, sample and individual cases

The full set of cases from which a sample is taken is called the population. In sampling, the term ‘population’ is not used in its normal sense, as the full set of cases need not necessarily be people.

I have used sampling method in my research because:

• it was impracticable for me to survey the entire population;
• my budget constraints prevented me from surveying the entire population;
• my time constraints prevented me from surveying the entire population;

c) Method to be adopted in selection of cultivators for the survey

My sample consists of 640 farmers in Pune Region of Maharashtra State, India. This analysis of coded descriptive data brings out the result of the research work. These data simply count the number of occurrences in each category of the farmers surveyed. 640 farmers of various categories responded in completing the questionnaires. The table 1 below details the numbers.
Number of questionnaires distributed | 640
Number of fully completed questionnaires | 640
Overall Response rate | 100%

Farmer Category categories and number of questionnaires returned

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugarcane</td>
<td>160</td>
</tr>
<tr>
<td>Tomato</td>
<td>80</td>
</tr>
<tr>
<td>Rice</td>
<td>80</td>
</tr>
<tr>
<td>Potato</td>
<td>80</td>
</tr>
<tr>
<td>Onion</td>
<td>80</td>
</tr>
<tr>
<td>Grapes</td>
<td>80</td>
</tr>
<tr>
<td>Groundnut</td>
<td>80</td>
</tr>
</tbody>
</table>

Total number of responses | 640

**Table 10: Response rate and number of questionnaires returned by various categories of Farmers**

In each of the farmer category, 80 questionnaires were distributed as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Borrower</td>
<td>30</td>
</tr>
<tr>
<td>Small non Borrower</td>
<td>10</td>
</tr>
<tr>
<td>Large Borrower</td>
<td>30</td>
</tr>
<tr>
<td>Large non Borrower</td>
<td>10</td>
</tr>
</tbody>
</table>

**Table 11: Questionnaire Distribution for each farmer category**

**Study Area:** Study area is confined to farmers Pune District.

**Sampling techniques**

Two types of sampling techniques were available to me:

- probability or representative sampling;
- non-probability or judgmental sampling

Figure below highlights the two techniques. With probability samples the chance, or probability, of each case being selected from the population is known and is usually equal for all cases. This means that it is possible to answer research questions (hypotheses) and to achieve objectives that require the researcher to estimate statistically the characteristics of the
population from the sample. Consequently, probability sampling is often associated with survey and experimental research strategies.

For **non-probability samples**, the probability of each case being selected from the total population is not known and it is impossible to answer research questions or to address objectives that require the researcher to make statistical inferences about the characteristics of the population. The researcher may still be able to generalize from non-probability samples about the population, but not on statistical grounds.

![Sampling Techniques Diagram](image)

**Figure 5: Sampling techniques**

I have used purposive non-probability sampling for my research; using my judgement to select the cases that make up the sample that will best enable me to answer my research question(s)/ hypotheses and to meet my objectives. I could not use the probability sampling because I did not have a sampling frame (a complete list of all the cases in the population from which I could draw a sample). Further, it would not be appropriate to answering my hypotheses because my population consists of different classes of farmers – large and small, borrowers and non-borrowers, illiterate and literate, young and old.

A range of non-probability sampling techniques was available to me to answer my hypotheses and address the objectives of my research Figure above. I
chose quota sampling as the most appropriate sampling method for my research, which, like probability samples, tries to represent the total population. Quotas ensure that the sample accurately reflects relevant sub-groups in target population, which has a number of strata. Quota sampling has similar requirements for sample size as probabilistic sampling techniques. Quota sampling is based on the premise that my sample will represent the population as the variability in my sample for various quota variables is the same as that in the population. Quota sampling is therefore a type of stratified sample in which selection of cases within strata is entirely non-random (Barnett, 1991 in Saunders et al 2008).

Figure 6: Selecting a non-probability sampling technique
Quota sampling is appropriate for my research because the likelihood of sample being representative is high, though dependent on selection of quota variables. Quota sampling has a number of advantages over the probabilistic techniques. In particular, it is less costly and can be set up very quickly. Quota sampling is normally used for large populations. Decisions on sample size are governed by the need to have sufficient responses in each quota to enable subsequent statistical analyses to be undertaken. I ensured that each subgroup had sufficient number of respondents to enable meaningful statistical analyses. Once the data was collected from my sample, I disaggregated my findings into 7 subgroups – farmers growing sugarcane, potatoes, rice, onion, grapes, tomatoes and groundnuts.

Secondary Data

When considering how to answer my hypotheses, I considered initially the possibility of reanalyzing data that have already been collected for some other purpose - secondary data.

Secondary data include both quantitative and qualitative data, and they are used principally in both descriptive and explanatory research. There are three main subgroups of secondary data: documentary data, survey-based data, and those compiled from multiple sources.

I have mainly used Documentary secondary data in my research. Written documents included audited accounts of cooperative bank, annual reports, books, journal and magazine articles and newspapers. The documentary sources I have used are:

- I relied heavily on the, Statistical Data provided by Pune District Central Cooperative Bank, Socio economic Abstract of Pune District, Crop and Season Report of Maharashtra, Economic Survey of India, Economic Survey of Maharashtra, library at Gokhale Institute of Politics and Economics. Various Research Papers were also referred, mostly from Institutes from Pune region as the area of research being Pune. The task has been both fruitful and interesting. The research journals and various business magazines available in the library were a major source of
secondary research. A large number of Books, Journals, Periodicals, were referred to from the library of Gokhale Institute of Politics and Economics.

**Advantages and disadvantages of secondary data**

For many research questions and objectives, the main advantage of using secondary data is the enormous saving in resources, in particular researcher's time and money (Ghauri and Grønhaug, 2005 in Saunders et al 2007). The secondary data has provided my research comparative and contextual data, allowing me to place my own findings within a more general context or, alternatively, triangulate my findings.

The main disadvantage of secondary data is that it may have been collected for a specific purpose that differs from my research objectives.

In my research, I have ensured that the secondary data is valid and will enable me to answer my hypotheses and to meet my objectives; the benefits associated with their use will be greater than the costs; allowed access to the relevant secondary data.

**Primary data using questionnaire**

In my research, I have used questionnaire within my survey strategy. Questionnaire is a general term that includes all techniques of data collection in which each person is asked to respond to the same set of questions in a pre-determined order (deVaus, 2002 in Saunders et al 2007). The questionnaire is one of the most widely used data collection techniques within the survey strategy. Because each person (respondent) is asked to respond to the same set of questions, it provides an efficient way of collecting responses from a large sample prior to quantitative analysis. I have endeavoured to ensure that I have designed the questionnaire such that it has collected the precise data that I required to answer my research hypotheses and achieve my objectives.

The design of my questionnaire would affect the response rate and the reliability and validity of the data I collect. I have endeavoured to ensure that response rates, validity and reliability were maximized by:
• careful design of individual questions;
• clear layout of the questionnaire form;
• lucid explanation of the purpose of the questionnaire;
• carefully planned and executed administration\textsuperscript{xci}

**Questionnaire**

Questionnaires can be used for descriptive or explanatory research. Descriptive research, such as that undertaken using attitude and opinion questionnaires and questionnaires of organizational practices, will enable one to identify and describe the variability in different phenomena. I have used self-administered questionnaires that were, in the main, completed by the respondents. I have ensured clear wording of questions using terms that are likely to be familiar to, and understood by, respondents can improve the validity of the questionnaire.

I have used closed questions, sometimes referred to as closed-ended questions (Dillman, 2000) or forced-choice questions (deVaus, 2002). I have used dichotomous questions - ‘Yes’/’No’ - and category questions for obtaining responses. Closed questions are usually quicker and easier to answer, as they require minimal writing. Responses are also easier to compare, as they have been predetermined.

There are six types of closed question\textsuperscript{xcii}

- *list*, where the respondent is offered a list of items, any of which may be selected;
- *category*, where only one response can be selected from a given set of categories;
- *ranking*, where the respondent is asked to place something in order;
  - *rating*, in which a rating device is used to record responses;
- *quantity*, to which the response is a number giving the amount;
- *grid*, where responses to two or more questions can be recorded using the same matrix
I have used **category questions** in my research. Category questions are designed so that each respondent’s answer can fit only one category. Such questions are particularly useful if you need to collect data about behavior or attributes.

Because I have used self-administered questionnaire format, I have endeavoured to make it simple to encourage the respondent to fill it in and to return it, while not appearing too long.

Research findings on the extent to which the length of the questionnaire will affect the response rate are mixed (deVaus, 2002). In general, it is found that a length of between four and eight A4 pages has been acceptable for within-organization self-administered questionnaires. My questionnaire for farmers is three A4 pages and the questionnaire for Secretary of the PACS is one A4 page. I have used Cambria and Calibri fonts, making the questionnaires very easy to read.

I am grateful to the Secretary of the PACS, Pune District Central Cooperative Bank; with their support I could have access to secondary data and to farmers. I personally explained my research objectives to each of the 640 farmers and guided them through the questionnaire so that they understood the questions fully. Respondents were eager to give their opinion and viewpoint and I am extremely grateful to these 640 farmers.

**Explaining the purpose of the questionnaire the covering letter**

Most self-administered questionnaires are accompanied by a covering letter, which explains the purpose of the survey. This is the first part of the questionnaire that a respondent should look at. Research by Dillman (2000) [in Saunders et al 2007] and others has shown that the messages contained in a self-administered questionnaire’s covering letter will affect the response rate. For some research projects, one may also send a letter prior to administering the questionnaire. The respondent will use this to decide whether to grant the researcher access. Consequently, it is often the only opportunity the researcher has to convince the respondent to participate in the research.
In contrast to attaching a covering letter, I sat with each of the 640 farmers who volunteered to respond to my questionnaire and explained the purpose of my survey. This ensured that I had a 100% response rate.

**Closing the questionnaire**

At the end of the questionnaire the researcher needs to explain clearly what he wants the respondent to do with their completed questionnaire. It is usual to start this section by thanking her/him for completing the questionnaire. The researcher should then give details of the date by which the questionnaire should be returned and how and where to return it.

Again, because I personally sat down with each respondent, I collected the questionnaire immediately after it was completed.

**Pilot testing and assessing validity**

Prior to using the questionnaire to collect data, it should be pilot tested. The purpose of the pilot test is to refine the questionnaire so that respondents will have no problems in answering the questions and there will be no problems in recording the data. In addition, it will enable the researcher to obtain some assessment of the questions’ validity and the likely reliability of the data that will be collected. Preliminary analysis using the pilot test data can be undertaken to ensure that the data collected will enable the investigative questions to be answered.

As well as allowing suggestions to be made on the structure of the questionnaire, this will help establish content validity and enable the researcher to make necessary amendments prior to pilot testing with a group as similar as possible to the final population in the sample.

The questionnaire for my research was pre-tested to check question design, clarity of instructions and the time taken to complete. Pre-testing is designed to improve the reliability and validity of the data collected and the final response rate (Roberts 1999). According to Zikmund (2000, p. 257) two pre-test procedures can be used: screening the questionnaire with other research professionals; and to have a trial run.
Three pre-test procedures were utilized in developing the questionnaire. First, the Guide of this thesis, Principal Dr C P Rodrigues, initially reviewed several drafts of the questionnaire resulting in a number of changes to the design of the instrument, specifically wording and sequencing but not the focus of the questions. Second, the questionnaire was given to Secretary of the PACS and the Bank officials who commented on the design and clarity of the instrument as well as the time taken to complete the survey.

This pre-test sample was chosen as the researcher had access to these officials. Appropriate changes were made to the questionnaire to improve the reliability and validity of responses.

The field research was conducted in Pune region between 2011 and 2012. The field research called for contacts with bank officials, Secretary of the PACS and the farmers in Pune District.

I found the response to my request overwhelmingly positive. I was able to speak to many farmers growing different crops, those borrowing and those not borrowing and to get their opinion to their approach first hand. The instrument, however, being predominantly close-ended, required relatively less time to answer. The Respondents were eager to give their opinion and viewpoint, as well as encouraging in their attitude for which I am extremely grateful.

4.6 Statistical Tools used for Data Analysis

The Data was analysed with the help of Microsoft Windows, Microsoft Excel 2010 Software and SPSS Package.
4.7 Limitations of the Method of Collection

With prior anticipation, an advance action plan was prepared to avoid a few problems before primary investigation. However, a number of problems were still encountered while collecting or generating data. This section briefly describes how they have been dealt with.

1. The questionnaire was distributed to farmers who, after explaining to them the purpose, showed interest and co-operated.

2. Before handing the questionnaire to them, the farmers were thoroughly informed about the nature, requirement, purpose and importance of the study.

3. Before meeting the farmers, prior appointment was taken with Secretary of the PACS.

4. The respondents were assured about the confidentiality of the response provided by them.

5. Numerous visits to the PACS were necessary to ensure that farmers were present for the survey.