CHAPTER 3

METHODOLOGY OF THE STUDY

The methodology includes the titles of type of research, research method, sources of data, instruments, sample design, sampling method, area of the study, tools used for analysis in the research, limitations of the study and significance of the study.

3.1 TYPE OF RESEARCH

The classification of type of research, in real life situations may not be confined to a particular type strictly. The research design provides the framework to be used as a guide in collecting and analyzing data. This study broadly follows Descriptive Research design. As the name implies, the major objective of descriptive research is to describe something - usually farmers and integrator characteristics or functions. In Descriptive Research Design, a cross- sectional type was used. Cross- sectional design is a one- shot research study at a given point of time and consists of a sample (cross- section) of the population of interest.

3.2 RESEARCH METHOD

Survey Method was used for this study as it is the most appropriate method for Descriptive Research Design. Survey can be used to learn about farmers and integrator’ opinions, preferences, perception, satisfaction, etc. A survey instrument was developed and the respondents were asked to fill up that. The respondents were personally interviewed by the researcher in their
farmer / organization, as it is the preferred method for doing surveys in India, and the data were collected. The researcher has chosen this survey method, because the interview schedule was extensive and getting the co-operation of respondents when they were working in their farm or organization, in-between their work, was found to be difficult. Through survey method, we can measure sample statistics of various variables and the sample statistics can be used for estimating population parameters.

3.3 SOURCES OF DATA

Both primary and secondary data were collected so as to fulfill the various objectives of the research study. This research study is explorative in nature. For the purpose of collecting of data, a detailed interview schedule was prepared to collect data from the farmers and integrators (Contract Companies). Adequate care was exercised to collect unbiased data from the respondents. All respondents were personally interviewed by the researcher and responses were recorded in the schedule.

3.4 INSTRUMENTS

For the purpose of studying the objectives and testing the hypothesis, two separate interview schedules, one each for the 375 farmers and for 30 integrators, were prepared. For the integrators schedule, the researcher found it difficult to collect the data from some of the companies. After continuous efforts, some of the companies have accepted to provide the information on the basis of confidentiality. Hence, names of the integrators are not given in this research. The farmers have co-operated well and the response from the farmers is highly appreciable. Before going for full data collection, pilot studies of 60 respondents of farmers were carried out and reliability has been validated for scales used in the schedule. Perception scale was constructed and reliability test was conducted using Cronbach’s Alpha.
The alpha value is found to be 0.78 which is fairly reliable. The other parts of the interview schedule were validated by the experts in the field like Managers, Farm Officers of Integrators. Based on the suggestions, modifications were carried out in the schedule.

3.5 SAMPLE DESIGN

For the purpose of the study, the total number of farmers selected for the study was 375 from the farmers’ population totaling 6011 and all the 30 integrator companies were taken into account. To find out the farmers’ sample size from the farmers’ population, the researcher used Taro Yamane's formula.

\[
Taro\; Yamane's\; formula: \quad n = \frac{N}{1+N(e)^2} \quad (3.1)
\]

Where,

- \( n \) = sample size
- \( N \) = population size (The Universe)
- \( e \) = sampling error (Usually .10, .05 and .01 acceptable error)
- \(^\wedge\) = raised to the power of

3.6 SAMPLING METHOD

The interview schedule was structured simple and understandable so as to cover the objectives of the study. The method of sampling adopted for the study was proportionate random sampling method. This sampling method was adopted to find out the samples and the proportionate value of each taluk has been calculated and based on the values, samples were finalized by snowballing technique to identify the respondents. For integrators, the whole populations of 30 have been taken into account for the study. The farmers’ samples size Table is as follows,
Table 3.1 Farmers’ Samples Size in the Region

<table>
<thead>
<tr>
<th>District</th>
<th>Taluk</th>
<th>Number of Farmers</th>
<th>Samples Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erode</td>
<td>Erode</td>
<td>87</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Perundurai</td>
<td>82</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Gopichettipalayam</td>
<td>159</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Sathiyamangalam</td>
<td>52</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Bavani</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Tirupur</td>
<td>Palladam</td>
<td>869</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>Tirupur</td>
<td>468</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Avinashi</td>
<td>631</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Dharapuram</td>
<td>570</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>Kangeyam</td>
<td>476</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Udumelpet</td>
<td>868</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>Madathukulam</td>
<td>502</td>
<td>31</td>
</tr>
<tr>
<td>Coimbatore</td>
<td>Thondamuthur</td>
<td>28</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Madhukarai</td>
<td>69</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Sarkarsamakulam</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Periyanaiikanpalayam</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Annur</td>
<td>71</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Karamadai</td>
<td>41</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Sulur</td>
<td>166</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Sulthanpet</td>
<td>228</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Kinathukadavu</td>
<td>228</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Pollachi North</td>
<td>184</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Pollachi South</td>
<td>141</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Anamalai</td>
<td>45</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>6011</strong></td>
<td><strong>375</strong></td>
</tr>
</tbody>
</table>
3.7 AREA OF THE STUDY

The area of study is confined to Coimbatore, Erode and Tirupur Districts of Tamilnadu only. The present study dealt with broiler farms run by the contract farmers only.

3.8 TOOLS USED FOR ANALYSIS IN THE RESEARCH

Descriptive statistical measures namely frequency distribution, arithmetic mean, standard deviation and inferential statistics namely, Chi square test, F test, t-test, Multiple Regression and Factor analysis were used in this study. A brief description about the applied statistical tools is discussed below:

3.8.1 Descriptive Statistics

Descriptive statistics is used to describe the main features of a collection of data in quantitative terms. Descriptive statistics is distinguished from inferential statistics (or inductive statistics). It aims to quantitatively summarise a data set rather than being used to support inferential statements about the population. Even though data analysis draws its main conclusions using inductive statistical analysis, descriptive statistics is generally presented along with more formal analysis.

I. Frequency Distribution

Frequency Distribution shows a summarised grouping of data divided into mutually exclusive classes and the number of occurrences in a class. It is a way of showing unorganised data e.g. to show age, gender or income of respondents, growing charges of bird, etc.
The frequency distribution of the variables has helped the researcher to calculate distribution value of the variables tested. These are used for both qualitative and quantitative data. However, in the present research, this distribution has been mainly used to quantify personal profile and poultry business related information of the respondents.

Descriptive analysis has been applied to measure mean and SD for the dependent variables like, perception of poultry business and risk factors associated with poultry business whereas, education, years of experience, monthly expenditure, training attended and are some of the independent variables used in the study.

II. Mean

Mean summarises the data into a single value and it is easier to understand the data rather than having a set of observations. Mean characterises the data values of a set. The means are nothing but averages, which are used in this study the measure the characteristics like perception scores. These mean scores are compared across several groups of independent variables to find how one group is better than the other group in terms of mean scores or values and find the differences between the groups.

III. Standard Deviation

Standard deviation (SD) is a widely used measurement of variability used in statistics. It shows how much variation there is from the average (mean). A low SD indicates that the data points tend to be close to the mean, whereas a high SD indicates that the data are spread out over a large range of values. The standard deviations are used in this study for the dependent variables like perception scores, risk scores to find the extent of variation present in the groups.
3.8.2 Chi-square Test

Chi-square test is one of the most common ways to examine association between two or more categorical variables. It tests the independence of two variables or attributes and the test statistic is called chi-square statistic.

3.8.3 T-test

T-test is a statistical tool used to find whether differences exist among the means of two groups and hypothesis based on which is tested. T-test in this study was applied to find any significant differences exist among those who availed loan and those who did not avail loan in the average growing charges for the respondents.

1.8.4 ANOVA (F-Test)

The ANOVA technique is important in the context of those entire situations where more than two populations are compared. It is a method of analysing the variance to which a response is subjected to various components. In this study the variance with respect to the perception factors and risk factors are studied. The variations among different groups of independent variable are tested using ANOVA to find on average, whether the mean differences between the groups are significant.

3.8.5 Multiple Regression

How the level of risk derived from the set of statements to measure the extent of risk is influenced by various predictor variables (independent variables) is explained by Multiple Regression analysis. Regression analysis was applied to find the effect of several personal
variables and poultry business related variables on the overall risk score of the respondents towards poultry business.

Multiple Regression is mainly building an equation wherein the predictor variables' coefficients are found out. The general Multiple Regression equation is of the form,

\[ Y = a_0 + a_1X_1 + a_2X_2 + \ldots + a_nX_n \]

where \( Y \), the dependent variable
\( a_0 \), constant
\( a_1, a_2, \ldots, a_n \) are the regression coefficients to be estimated for the independent variables \( X_1, X_2, \ldots, X_n \) respectively.

In research, while making comparisons between groups, a major emphasis is often placed on the significance level. This significance level is often represented as a p-value. Then tests were conducted at Ns- Not significant, 1% (***) and 5 %(* ) level of significance.

3.8.6 Factor Analysis

The general purpose of Factor Analysis is to find a method of summarising the information contained in a number of original variables into a smaller set of new composite dimensions (Factors) with minimum loss of information. The Factor Analysis is used in this study to extract the underlying dimensions or latent factors in the set of statements relating to the perception of contract farmers on poultry industry.

The present study is reminiscent in nature as it aims to elaborate the perception of contract farmers towards poultry business. It is a more unambiguous study, as it has a multidimensional view on the selection of
problem. It provides a basis for formulating more effective applications. A systematic interview schedule, suitable selection of statistical tools and expedient methodology followed in the study lead to offer valuable suggestions.

3.9 LIMITATIONS OF THE STUDY

1. The sample size was restricted to Coimbatore, Erode and Tirupur Districts of Tamilnadu only.

2. The analysis was based on the data collection with the help of the interview schedule and this has its own limitations.

3. The present study limits itself to broiler units run by the farmers and poultry integrated companies in the study region and all the respondents were personally interviewed to avoid any response bias and Hence, the findings will be more appropriate and credible.

4. Majority of the poultry farmers are from this study area only and the data collection was done with proper care and to reduce the sampling bias. The sample respondents were randomly selected and proportionately distributed across all the study areas.

5. The information provided by the respondents was purely based on their perception only. The quality and reliability of the data collected were the actual expression of respondents. Any research work based on respondents’ perception and expectation cannot provide static results and it may tend to change over a period. Also only three districts were selected
for the study. As a result, the generalization of the findings of this research should be considered carefully.

3.10 SIGNIFICANCE OF THE STUDY

This study focuses on the profile of poultry industry, origin and development of contract poultry farming and addressed the problems and challenges faced by the farmers and integrators and find out the reasons and ways to reduce the gap between the farmer and integrator in terms of production, business process and poultry related issues. The findings of the study may be used by policy makers, integrators and farmers to understand and prepare the development plans for the future.