CHAPTER-I
INTRODUCTION AND DESIGN OF THE STUDY

1.1 INTRODUCTION-VALUE CHAIN

A value chain is the whole series of activities that create and build value at every step. A value chain is the whole series of activities that create and build value at every step. The total value delivered by the company is the sum total of the value built up all throughout the company. Michael Porter developed this concept in his 1980 book 'Competitive Advantage'. The value chain concept separates useful activities (which allow the company as a whole to gain competitive advantage) from the wasteful activities (which hinder the company from getting a lead in the market). The value chain as made of primary activities and support activities. Primary involves inbound logistics (getting the material in for adding value by processing it), operations (which are all the processes within the manufacturing), outbound (which involves distribution to the points of sale), marketing and sales (which go sell it, brand it and promote it) and service (which maintains the functionality of the product, post sales).

The support functions which feed into all the primary functions are the firm infrastructure, Human Resource, which develops the skills needed to steer the company well; procurement to buy/source goods at the right price, which increasingly takes importance because of difficult economic conditions and technology, which could give the firm speed, accuracy and quality. Both these allow the firm to charge a margin, which partly comes from the value addition of the primary and support functions and partly from the advantage that the company gains due to communication of the value addition to the consumer.

1.2 CO-OPERATIVE SOCIETIES

In the words of Calvert, cooperative is, “a form of organization wherein persons voluntarily associate together as human beings on a basis of equality for the promotion of economic interests of themselves.” C.R.Fay says that, “cooperation is an association for the purpose of joint trading among the weak and conducted always in an un-selfish spirit on such terms that all who are prepared to assume the
duties of membership may share its rewards in proportion to the degree in which they make use of their association.”

According to International Cooperative Alliance, a cooperative can be defined as “an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise”. Center for Cooperatives defined cooperative as a “private business organization that is owned and controlled by the people who use its products, supplies or services. Although cooperatives vary in type and membership size, all were formed to meet the specific objectives of members, and are structured to adapt to members changing needs”. Professor Lambers’s definition has received the widest recognition. It has been supported by cooperative leaders throughout the world. Lamber says that, “a cooperative society is an enterprise formed and directed by as association of users, applying within itself the rules of democracy and directly intended to serve both its own members and community as a whole.” This definition clearly laydown that a cooperative organization is not only meant to serve the interest of its members, but also of the community. From the above definitions it would be clear that there is hardly any unanimity among the writers regarding the scope and subject-matter of cooperation. One cannot find a common denominator for these divergent opinions. A cooperative society, thus, can serve various aims and economic systems and can cater to the needs of politically, socially and religiously divergent people at one and the same time. Since dairying and milk production involves all these aspects, Co-operative has been recognized as the best suited agency to promote dairying and milk production.

1.3 MEANING OF DAIRY COOPERATIVES

Dairy Cooperative is an association of small-land-holder of milk producers, marginal farmers and landless labourers to organize to produce milk and milk products, collection of milk, carry out research to maintaining the quality of milk and bovine, manage the farm and production of fodder and marketing the milk and milk products. It serves the interest of not only to its members but also community at large.
1.4 OBJECTIVES OF DAIRY COOPERATIVES

The Dairy Co-operatives have been organized with manifold objectives. Firstly, they have a role in augmenting the milk production and thereby increasing the per capita availability of milk which has been dwindling. Secondly, they have the object of supplying quality milk to the urban consumers at reasonable rates. Thirdly, they have to improve the rural economy by increasing the quality of milch animals, average milk yield and enable milk production as an economic venture.

The milk co-operatives therefore have a crucial role to play both from the producers and consumers point of view. Encouragement of Cooperative milk supply / producers society, therefore has been a committed policy of Government. In this context the Government has encouraged the co-operatives by providing financial, managerial and technical assistance to organize more number of Cooperative societies so as to bring the milk producers under its fold.

1.5 ORGANISATIONAL STRUCTURE OF DAIRY COOPERATIVES

The most rational organizational parameters for dairy cooperatives would be:

i. Primary milk producers’ cooperative societies at the village level which would be operationally and financially viable. Such societies should be in a position to collect at least 300 to 500 litres of milk daily depending on the margin available between purchase price and the sale price.

ii. District milk producers cooperative union which will own chilling plants located strategically and a pasteurization plant. The capacity of the pasteurization plant should be decided with due regard to (a) the quantity of milk which could be marketed locally in the urban areas of the district (b) the possibility of chilling and transporting surplus milk after meeting the local demand, to the nearest metropolitan city dairy for pasteurization and distribution.

iii. A state level for or regional dairy federation which would be able to supports and guide district unions absorb surplus milk available with the District Unions for distribution in the big cities and also convert any surplus milk received from the district unions into milk powder and other products either for sale, or for later use for recombination in times of scarcity particularly in the lean season. It
is important that the Federation should have control over the dairies and the market in at least one major city which could absorb surplus milk.

1.6 SIGNIFICANCE OF THE DAIRY COOPERATIVES

1. Dairying has become an important secondary source of income for millions of rural families and has assumed the most important role in providing employment and income generating opportunities.

2. The sector is highly livelihood-intensive and provides supplementary income to over 70 percent of all rural and some urban households. Milk production and marketing system in India is unique. Most of the milk is produced by small, marginal farmers and landless labourers.

3. About 14.46 million farmers have been brought under the ambit of 1,44,168 village level dairy corporative societies.

4. Land holdings in India are generally marginal, small and fragmented. Medium and large holdings account for less than 10 percent of the holdings. Landless, marginal (below 1 ha) and small (1-2 ha) land holdings constitute about 80 percent of rural households and own almost 33 percent of the total farming land holdings.

5. Livestock production in rural India takes place as a household activity and seldom employs hired labour.

6. Women constitute 71 percent of the labour force in livestock farming; there are 75 million women compared to 15 million men, engaged in dairying. Rural women play a significant role in animal husbandry and are involved in feeding, breeding, management, health care and other operations.

7. Landless labourers own milch animals and earn substantial additional incomes from sale of milk, particularly in the dairy cooperative society (DCS) villages and other areas with a milk marketing infrastructure.

8. In a normal year, crop production can generate employment for this workforce for only 90 to 120 days, for the remaining period, they are virtually unemployed. In this setting, dairying provides for the employment imbalance.
1.7 VALUE CHAIN OF THE INDIAN DAIRY INDUSTRY

The Indian dairy industry has been through an evolution right from the British era till today. It has come a long way over the years from a milk production volume of 55.7 million tons in 1991-92 to 140 million tonnes by 2014\textsuperscript{1}. Steadily and firmly, it has cruised to become numero uno in the list of milk producing countries and the smallholder milk producers have scripted this success story. Today, the Indian Dairy industry stands at a mammoth size of US$ 70 billion. Given the highest bovine population of 115.487 million in the World, India exhibits tremendous potential to further strengthen its position in the World dairy market. The operation flood program promoted and implemented by the National Dairy Development Board (NDDB) has been instrumental in bringing about a white revolution in India. Changing lifestyle, feeding habits and urban culture has somewhat effected the transition of the Indian dairy Industry into a more of a demand driven, highly diversified and exciting business proposition.

Supply chain in Indian dairy industry starts from supplying inputs for dairying in form of fodder, after supplying feed to the milch animals, milk is taken out from the milching animal on the daily basis by the dairy farmers (large, medium and small scale farmers) which afterwards is collected by the milk collection Centres (various milk cooperatives societies). Then the milk collected as such is sent to the dairy plants where chilling of milk, processing and packaging and transportation of milk and milk products is carried out. The transportation of chilled milk from one place to another is done through the means of refrigerated vans, or insulated milk tankers vans of private, government and cooperatives societies.

1.8 AAVIN

The Dairy Development Department was established in Tamil Nadu in the year 1958 to oversee and regulate milk production and commercial distribution in the state. The Dairy Development Department took over control of the milk cooperatives. It was replaced by the Tamil Nadu Cooperative Milk Producers Federation Limited in the year 1981. On February 1, 1981, the commercial activities

\textsuperscript{1} Source:www.thehindu.com/business/Industry/milkproduction-rises-to-140-million-tonnes-in-2013-14/article6085584.ece.
of the cooperative were handed over to Tamil Nadu Co-operative Milk Producers’ Federation Limited which sold milk and milk products under the trademark "Aavin".

With many private companies entering the field of dairy, the Tamil Nadu government is giving high priority to improve the performance of the cooperatives. Tamil Nadu is one of the leading states in India in milk production with about 14.5 million liters per day. The prestigious Salem Aavin Dairy complex situated in about 46 acres of land bound by Sithanur and Dhalavaipatty village is one among the leading producers and suppliers of milk in Tamilnadu.

1.9 AAVIN MILK CO-OPERATIVE SOCIETIES

The farmer owned co-operative in Tamilnadu-AAVIN has become a great success in the dairy development projects in India. The model showed that an integrated approach along co-operative lines could enhance production, procurement, processing and marketing of milk. The major purpose is to provide a regularized and standardized link between the rural milk supply centers and urban demand centers.

The details of the Salem District co-operative milk producer’s Union is given below:

<table>
<thead>
<tr>
<th>Salem District Cooperative Milk Producers’ Union Ltd</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Registration of Salem District Cooperative Milk Producers’ Union Ltd</td>
<td>10.07.1978</td>
</tr>
<tr>
<td>2 Starting of the Salem District Cooperative Milk Producers’ Union Ltd</td>
<td>07.10.1978</td>
</tr>
<tr>
<td>3 Area of operation</td>
<td>Salem</td>
</tr>
<tr>
<td>4 No. of Societies affiliated</td>
<td>1140</td>
</tr>
<tr>
<td>5 No. of Functional Societies</td>
<td>1,049</td>
</tr>
<tr>
<td>6 Total Number of farmer members</td>
<td>3,26,684</td>
</tr>
<tr>
<td>a) Women Members</td>
<td>1,10,693</td>
</tr>
<tr>
<td>b) Pouring Members</td>
<td>47,582</td>
</tr>
<tr>
<td>7 No.of Rural Milk collection Routes</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Procurement Price paid to Producers</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td></td>
<td>Buffalow Milk per Kg Fat</td>
</tr>
<tr>
<td></td>
<td>Cow Milk per Kg Total Solid</td>
</tr>
<tr>
<td>9</td>
<td>Daily Average Procurement in Litres</td>
</tr>
<tr>
<td>10</td>
<td>Maximum Milk Procurement</td>
</tr>
<tr>
<td>11</td>
<td>Local Milk Sales</td>
</tr>
<tr>
<td>12</td>
<td>Processing capacity in lpd</td>
</tr>
<tr>
<td>13</td>
<td>Chilling capacity in lpd</td>
</tr>
<tr>
<td></td>
<td>Chilling Centre -</td>
</tr>
<tr>
<td></td>
<td>Attur</td>
</tr>
<tr>
<td></td>
<td>Namakkal</td>
</tr>
<tr>
<td></td>
<td>P. Velur</td>
</tr>
<tr>
<td>14</td>
<td>Handling at present in lpd</td>
</tr>
<tr>
<td></td>
<td>a.) Salem Dairy</td>
</tr>
<tr>
<td></td>
<td>b.) Chilling Centre -</td>
</tr>
<tr>
<td></td>
<td>Attur</td>
</tr>
<tr>
<td></td>
<td>Namakkal</td>
</tr>
<tr>
<td></td>
<td>P. Velur</td>
</tr>
<tr>
<td>15</td>
<td>Product Production Capacity (per day)</td>
</tr>
<tr>
<td></td>
<td>BUTTER</td>
</tr>
<tr>
<td></td>
<td>GHEE</td>
</tr>
<tr>
<td></td>
<td>SMP</td>
</tr>
<tr>
<td>16</td>
<td>No. of Regular Employees working in this Union</td>
</tr>
</tbody>
</table>

### 1.10 IMPORTANCE OF THE STUDY

Dairy supply chain involves numerous risks and uncertainties at various levels. Milk is a highly perishable commodity and thus timely delivery after processing is very crucial. Currently the Indian dairy market is growing at an annual growth rate of seven percent. Despite the increase in production, a demand supply gap has become imminent in the dairy due to the changing consumption habits, dynamic demographic patterns and the rapid urbanization of rural India. This means
that there is an urgent need for the growth rate of the dairy sector to match the rapidly growing Indian economy. The risk factors existing at the various levels in the supply chain affect the efficiency and productivity of milk by and large. The various risks and uncertainties existing in the supply chain and are considered in this study are

1. Inadequate feed for milch animals
2. Chances of more disease incidence
3. Low genetic potential of milch animals
4. Lack of chilling capacities
5. Exploitation of dairy farmers
6. High production costs
7. Delayed payment of dues
8. Involvement of too many intermediaries
9. Absence of screening system
10. Lack of Infrastructure
11. Manipulation of the quality of milk by the farmers,
12. Seasonality of production and supply
13. Lack of trained and skilled workers
14. Lack of cold storage facilities.

All these factors are hampering the productivity and effectiveness of the supply chain. To improve the dairy productivity, it becomes necessary to understand and analyze the various risk factors in the value chain of the co-operative societies and analyze their impact on various other links of the value chain. Thus this study attempts to find out the impact of these risks and uncertainties on the effectiveness of the value chain of Aavin in Salem district.

1.11 STATEMENT OF THE PROBLEM

The dairy industry in India has been on a steady path of progression since Indian Independence. It has grown from producing 17 million tons of milk in 1951 to producing 135 million tons in 2014. India is one of the largest milk producing countries in the world. This solid progress is primarily attributable to structural changes in the Indian dairy industry brought about by the advent of dairy
cooperatives. Highly competitive Indian dairy industry poses threat/challenges for the survival in the global dairy market. There is no doubt that there is a tremendous scope for the growth of the dairy industry in new millennium.

Most of the studies conducted in dairy industry have focused mostly procurement, pricing and consumer behavior towards dairy products. Only very few studies concentrate on co-operative societies and their risks and uncertainties. Similarly, though much research has been done into the dairy product attributes and marketing, only few studies deal with the effect of these risks and uncertainties on the dairy value chain. In order to bridge this gap the present study titled “A Study on the risk and uncertainties faced by Aavin milk co-operative societies and its impact on the effectiveness of Aavin value chain in Salem District” was undertaken.

1.12 OBJECTIVES OF THE STUDY

1. To detect the potential risks in varying degrees of the value chain of Aavin co-operative societies
2. To study the impact of various risks and uncertainties on the various aspects of the value chain of Aavin
3. To identify the drivers which will enhance the effectiveness of supply chain in Aavin.
4. To provide suggestions to improve the overall efficiency and improve the value addition of supply chain of Aavin.

1.13 RESEARCH METHODOLOGY

1.13.1 Research Area of the study

This study has been conducted in Salem district of Tamil Nadu, India. The geographical area of the district is 5203.30 Sq kms. It has four Revenue Divisions - Salem, Attur, Sankari, Mettur and nine taluks viz, Salem, Mettur, Omalur, Idappadi, Sankari, Yercaud, Valapady, Attur, Gangavalli. This place was chosen, in view of the fact that there is brisk milking activity. For the purpose of the study, only the areas in which there is huge number of dairy farmers actively engaged in dairy farming are concentrated. During the time, in which the research was conducted,
cattle holders, milk suppliers, cooperative societies, wholesalers and retailers were widely available in and throughout the research area making it possible to assess the risks and uncertainties existing in dairy industry supply chain.

**Salem District**

![Salem District Map](source: Map.www.tn.gov.in)

**Sampling Frame**

**Universe:**

The universe for the study comprises of the Aavin milk co-operative societies in Salem district. There are totally 1140 dairy co-operatives registered in different Taluks in Salem district.

The details are given below:

**Table No. 1.1**

<table>
<thead>
<tr>
<th>S No.</th>
<th>Taluk</th>
<th>No. of societies registered.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Salem</td>
<td>116</td>
</tr>
<tr>
<td>2</td>
<td>Omalur</td>
<td>110</td>
</tr>
<tr>
<td>3</td>
<td>Mettur</td>
<td>130</td>
</tr>
<tr>
<td>4</td>
<td>Edappadi</td>
<td>120</td>
</tr>
<tr>
<td>5</td>
<td>Sankari</td>
<td>194</td>
</tr>
<tr>
<td>6</td>
<td>Yercaud</td>
<td>60</td>
</tr>
<tr>
<td>7</td>
<td>Vazhapadi</td>
<td>116</td>
</tr>
<tr>
<td>8</td>
<td>Attur</td>
<td>199</td>
</tr>
<tr>
<td>9</td>
<td>Gangavalli</td>
<td>95</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>1140</strong></td>
</tr>
</tbody>
</table>
Sampling Unit: The sampling unit was limited to Co-operative societies registered with Aavin in the selected areas of Salem district (Nine Taluks)

Sample Size and Sample design:

The sample size is calculated as 404 by the sample calculator with 95% confidence level and 5% level of significance. Each taluk has been treated on quota and respondents for each quota were selected by Judgment sampling procedure.

<table>
<thead>
<tr>
<th>S No.</th>
<th>Taluk</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Salem</td>
<td>42</td>
</tr>
<tr>
<td>2</td>
<td>Omalur</td>
<td>39</td>
</tr>
<tr>
<td>3</td>
<td>Mettur</td>
<td>46</td>
</tr>
<tr>
<td>4</td>
<td>Edappadi</td>
<td>43</td>
</tr>
<tr>
<td>5</td>
<td>Sankari</td>
<td>68</td>
</tr>
<tr>
<td>6</td>
<td>Yercaud</td>
<td>21</td>
</tr>
<tr>
<td>7</td>
<td>Vazhapadi</td>
<td>41</td>
</tr>
<tr>
<td>8</td>
<td>Attur</td>
<td>70</td>
</tr>
<tr>
<td>9</td>
<td>Gangavalli</td>
<td>34</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>404</strong></td>
<td></td>
</tr>
</tbody>
</table>

1.14 DATA COLLECTION

1.14.1 Primary data

The primary data were collected from members of Aavin registered Co-operative societies in Salem district with the help of a questionnaire cum interview schedule. The questionnaire was prepared to know the potential risks and uncertainties in varying degrees of the supply chain of Salem Aavin. The researcher has elaborated to the respondents about the research and has obtained relevant information from the respondents using the questionnaire cum interview schedule.

1.14.2 Secondary data

Secondary data were collected from previous dissertations, Theses, Research papers, Journals, Magazines, News papers, Text books and websites, and from dairy
research institutes like National Dairy Research Institute, National Dairy Development Board in Bengaluru and Veterinary University Training and Research Centre, Salem.

Pilot Study

After the formulation of the questionnaire cum interview schedule, Pilot study was conducted. A sample of 50 respondents from the population was selected. Based on the Interview schedule and also based on the suggestions of the respondents, relevant modifications were done to the instrument. Then the questionnaire instrument was finalized.

1.15 STATISTICAL TOOLS USED

The study results were analyzed by using various statistical tools. The data collected from the respondents were analyzed and presented in the form of tables. Bar charts are used at various places as a statistical tool. The results are compared and analyzed by using descriptive analysis and inferential analysis.

Descriptive analysis

Descriptive analysis, also termed as percentage analysis, was used for each question contained in the interview schedule mainly to ascertain the distribution of respondents under each category. Diagrams and charts are mainly used for clear understanding of the data collected in pictorial forms. Pie-charts and bar charts were used for this purpose.

Non Parametric Friedman Test

The Friedman test is a nonparametric alternative to the repeated measures of analysis of variance. It is the non parametric equivalent of a one-sample repeated measures design or a two-way analysis of variance with one observation per cell. Friedman tests the null hypothesis that k related variables come from the same population. In order to ascertain the risk factors that will influence the effectiveness of supply chain, problems faced by milk suppliers, dairy cooperative societies, this test is used.
\[
G = \frac{12}{nK(K+1)} \sum R_j^2 - 3n(K+1)
\]

**Chi-square analysis**

The Chi-square analysis is used to test the significance of association between two attributes. In other words, this technique is used to determine the level of influence of the risks on the Aavin supply chain. All the tests were carried out at 5 percent level of significance. The chi-square statistic is

\[
\chi^2 = \sum \frac{(O - E)^2}{E}
\]

Here \(O\): Observed frequency \(E\): Expected frequency

**Average score analysis**

After converting the qualitative information into a quantitative one using a five point scale, the average scores were obtained on various issues to determine the level of uncertainties and risks faced by Co-operative societies of Aavin.

Parametric test of two sample t-Test and One way analysis of variance (Non parametric test of Kruskal-Wallis) for more than two groups are applied to for judging the significance of the difference between means scores of shared value, its impact on performance after testing the normality by Q-Q plot.

**Multiple Regression analysis**

Linear regression is used to model the value of a dependent scale variable based on its linear relationship to one or more predictors. Linear Regression estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable. This relationship is described in the following formula.

\[
y = b_0 + b_1x_1 + b_2x_2 + \ldots + b_px_p + e
\]

Where \(y\) is the dependent variable, \(p\) is the number of predictors

- \(b_j\) is the value of the \(j\)th coefficient
- \(x_j\) is the value of \(j\)th predictor
- \(e\) is the error in the observed value
In this section multiple regression analysis is used to explain the variation in the Satisfaction score (dependent variable) based on the variation over the variables (independent variable).

**FACTOR ANALYSIS**

Factor analysis is a statistical technique used to study the inter-relationships among the variables in an effort to find a new set of factors, fewer in number than the original variables so that the factors are common among the original variables. In factor analysis a small number of common factors are extracted so that these common factors are sufficient to study the relationships of original variables. Factor analysis helps the researcher to reduce the number of variables to be analysed, thereby making the analysis easier. Using Factor analysis, the researcher can reduce the large number of variables into a few dimensions called factors that summarize the available data. It aims at grouping the original input variables into factors which underlying the input variables.

**HENRY GARETT RANKING**

This technique was used to rank the risk factors that influence the Aavin supply chain. In the Garret’s scoring technique, the respondents were asked to rank the factors and these ranks were converted into percent position by using the formula

\[
\text{Percent position} = 100 \left( \frac{R_{ij} - 0.5}{N_j} \right)
\]

Where

- \( R_{ij} \) = Rank given to the \( i \)th attribute by the \( j \)th individual
- \( N_j \) = Number of attributes ranked by the \( j \)th individual

By referring to the garret’s table, the present positions are estimated and are converted into scores. Thus for each factor, the scores of the various respondents were added and the mean score was estimated. The means thus obtained for each of the attributes were arranged in descending order. The attribute with the highest mean score was considered as the most important one and the others follow in order.

**1.16 PERIOD OF THE STUDY**

The period of the research study is three years, starting from September 2011 and ending in September 2014. The researcher took first one year to collect the
review of literature and identify the research gap. Four months were spent to draft the research design, to prepare data collection instrument and to conduct the pilot study. After finalizing the questionnaire, six months have been spent to collect the data from the target respondents. The researcher took one year to analyze and interpret the collected data and six months to prepare the thesis.

1.17 SCOPE OF THE STUDY

Indian dairy industry is undergoing drastic changes in the wake of liberalization and globalization. The dairy sector in India has shown remarkable development in the past decade and India has now become one of the largest producers of milk and value added milk products in the world. The National Commission on agriculture observed dairy farming as an additional source for improving the status of rural masses, especially weaker section, consisting of small, medium and landless farmers. A study of this kind will facilitate in understanding the risks and uncertainties faced by co-operative societies and its influence on the effectiveness in the various levels of the dairy supply chain.

The dairy-food supply chain is highly a riskier business concern to deal with. No matter what the precautions taken, risks and uncertainties can’t be ruled out from the industry. Since it is not possible to avoid them, a proper risk redressal mechanism could at least minimise the impact. The high risk areas are the crucial ones and need to be addressed soon while medium and low risk areas are not to be neglected at the same time. A basic priority for the dairy industry is to ensure that products distributed to the customers are safe and suitable for consumption. Milk borne injuries can be extremely fatal leading to unnecessary litigations and finally tarnish the image of the company in the long run. Since bacteria can grow in milk very rapidly and make it perished, it results in incurring heavy losses and brings down consumers’ confidence level. This nature of milk is very unique among all food items; which needs immediate attention. An efficient and effective supply chain management operation could provide for hygienic measures throughout the supply chain by adhering to the proper food value requirements. Hence the present study entitled “A study on the Risk and Uncertainties faced by Aavin Milk co-operative societies and its impact on the effectiveness of Aavin Value chain in Salem District is undertaken.
1.18 LIMITATIONS OF THE STUDY

The study has the following limitations.

1. The Universe being large, the study was restricted to the Aavin Co-operative societies in selected areas of Salem district only. So the sample may not be true representative of the population.

2. The target respondents were scattered in the study area. Meeting them and collecting data were difficult task.

3. Few respondents were illiterate and were unwilling to provide accurate data.

1.19 SCHEME OF CHAPTERS

The present empirical study has been divided into five chapters.

The first chapter deals with the Introduction and Design of the study. This includes Introduction, Importance of the study, Statement of the Problem, Objectives of the study, Methodology of the study, Period of the study, Scope of the study, Limitations of the study and Scheme of Chapters.

The second chapter deals with the review of related concepts and the already existing literature on this research topic. This chapter also deals with the various empirical studies of various authors. It will be useful to have a comprehensive understanding of the research topic under discussion.

The third chapter briefly presents Profile of the study area of this research inclusive of the profile of the dairy industry along with the theoretical background about the Aavin supply chain.

The fourth chapter expresses the analysis and interpretation of the study. In this chapter attempts have been made to analyze the factors affecting the overall efficiency of the Aavin supply chain.

In the fifth chapter the key findings and conclusion are recapitulated. Based on these findings, a few suggestions have been proposed for the effective Aavin supply chain.