CHAPTER II
REVIEW OF LITERATURE AND RESEARCH DESIGN

2.1 Review of Literature

A detailed survey on research and non-research studies on various aspects relating to dairy industry and the consumers have been made and from the survey relevant and selected studies are presented into two parts. The first part deals with the review of literature regarding milk cooperative movements and the contribution of milk cooperatives to the economy. The second part deals with the consumer perception towards milk.

2.1.1 Review of Literature related to milk cooperative movements

Muranjan (1977)\(^1\) in his study on, “Factors Responsible for increased procurement of Milk in Maharashtra” tells that the co-operative societies have ascertained the factors responsible for increased procurement of milk. The researcher has concluded that among the factors responsible, two most important factors were increase in the number of collection centers and a substances increase in the number of dairy co-operative societies due to the encouragement given by the Government.

Dilip Shah (1980)\(^2\) in his study titled, “Factors offering milk procurement has made a case study of the Gujarat co-operative Dairy plants”, has observed that the most important factor for the varieties in milk procurement was the increased number of dairy co-operatives at the village level established for the purpose of the processing of milk.

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Miriam Sharma and Urmila Vanjani (1989)\(^3\) analysed the main aim of promoting women's co-operatives in the Operation Flood programme is the provision of employment, income and increased status for rural women. On the basis of a field study among the women of Shankpur in Rajasthan, this article examines the class and gender biases in the dairy policy; its effects on the nutrition and health of women, and on food crop production; the employment potential of the programme; and the replication of the inequalities inherent in the Green Revolution.

Mattigatti et.al.,(1992)\(^4\)in their study titled, “Resource productivity in cow milk production- An impact of operation flood programme”, have evaluated the impact of the operation flood programme in six experimental villages which fall in the area of operation of the dairy cooperative societies in Dharwad district. They have found that the introduction of dairy co-operatives as a result of had brought about intensive cross breeding of cows and increase in their hard size.

Dubey (1995)\(^5\)in his study titled, “Dairy Co-operatives in socio-economic Transformation of rural economy”, has studied the income generation between the beneficiaries and the non-beneficiaries of dairy Co-operatives has been receiving higher net income than those of non-beneficiaries in terms of per year per animal and per liter. He has concluded that this increased income is the result of the proper utilization of the existing facilities and the infrastructure of milk Co-operatives by the members.

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Senhur Dayakar and Singh (1996)\(^6\) in their study entitled, “Impact of co-operatives on Dairy Development in Andhra Pradesh”, explained that the Operation Flood Programme aimed at promoting the establishment of viable farmer owned and managed dairy co-operatives for collecting, processing and marketing of milk and supplying technical inputs. Though increased thrust on the efficient organization and functioning of dairy co-operatives under the programme, it is expected that the growth and performance of dairy co-operatives organized on Anand pattern would improve the economic status of cattle breeding population.

Usha Rani et.al., (1997)\(^7\) in their study titled, “Impact of milk production and Marketed surplus of milk in Chittoor Milk shed area, Chittoor”, have commented that the women co-operative societies have made a significant impact on the level of production, consumption and marketed surplus of milk.

Das (2000)\(^8\) in his study entitled, “Planning for Dairy Development after Trade Liberalization”, visualizes that after the New Economic Policy was announced, National Dairy Development Board (NDDB) enjoys a monopoly on dairy development and there exists a boom in investment in new dairy processing units immediately after the liberalization of economy. He also extended that the future planning for dairy development should consider the issues relating to the extension of benefits of the co-operative sector in order to increase return to farmers as well as generation of rural employment.

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Suryamurthi (2001)\(^9\) in his study entitled, “Dairy Farm Sector a brief analysis”, the researcher points out that India’s annual milk production crossed 30 million tone mark in 1980’s and 50 million mark in 1990’s and in 2000 it has reached 86 million tones. He also focuses that the credit for this increase in milk production goes to millions of small dairy farmers who have been energized through co-operatives and other institutions and its first miracle was rural farmers joining together with professional managers to make the country self-sufficient in milk, second if enabled the nation to enjoy the status of the biggest milk producing nation.

Selvaraj (2002)\(^10\) in his study titled, “Marketing of dairy products through E-Commerce”, the dairy business in India merely means milk production and the co-operative moment has done a world of good for this predominantly agro based activity and India has grown sufficiently in milk production. He also extended that, depending on the local conditions, special training sessions are to be arranged to produce value added dairy products and to market their products all over the world by introduction of E-Commerce at village level.

David Hennessy and Jutta Roosen (2003)\(^11\) opinion that the Milk production is seasonal in many European countries. While quantity seasonality poses capacity management problems for dairy processors, a European Union policy goal is to reduce price seasonality. After developing a model of endogenous seasonality, we study the effects of three E.U. policies on production decisions. These are private storage subsidies, production removals, and production quotas. When cost functions are seasonal in a specified way, then arbitrage opportunities interact with storage subsidies to reduce both


price and consumption seasonality. But production seasonality increases because storage subsidies promote temporal market integration. Conditions are identified under which product market interventions increase quantity seasonality.

Prashant Khare Sharma and Singh (2003) of their opinion, Milk collection was higher in healthy season (from September to February) and lower in unhealthy season (from March to August). In spite of more production in the month of July and August, the producer members of the society were not in position to transport their product due to lack of all-weather roads. As the distance of the milk producer’s co-operative society increases forms the dairy plant, the volume of milk collection decreases, the milk collection was higher in those societies, which are well connected to the dairy plant. The variable cost was the main component of cost of milk production and the maximum cost incurred in the purchase of feed and fodder and in labour management. Low price of milk was the most important problems in the collection of milk, followed by lack of cold storage, delay in payment, inadequate water for animals, lack of all-weather roads, small quantity of marketable surplus of milk, improper treatment, lack of cross breed animals and uncertainty of electricity. Hence, efforts should be made to solve all there constraints.

Veeramani (2003) in his study entitled, “Dairy development in Tamil Nadu- A study with reference to Marketing of milk and milk products in Kanchipuram District”, analyzed the market share of the organized sector is increasing gradually. While the organized sectors share is on the decline. Branding of milk has become a integral part of all the marketing activities. Markets are manifested with several Branch. Due to heavy competition, most of the brands are priced and almost the same level.

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Antony Reegars (2004) in his study entitled, “An operational performance of Aavin Kumari”, explains the operational performance of Aavin Kumari. The researcher found the Kanyakumari Union is one among the 17 profit earning unions. The milk producers produced in the union are sold through their parlors, the shop in the societies and also to other districts. He gave some suggestions to encourage the milk producer’s society by giving more awards and prized as well as the ideas to improve the milk production.

Karpagam (2004) in his study titled “Study on the supply chain Management in milk industry with reference to Aavin Krishnagiri District Tamilnadu” that some of the findings of this study and the recommendations made, particularly that on strengthen milk supply chain and reducing cost of transportation on procuring raw milk and distributing processed milk and milk products, to strengthen the supply chain, so that dairying is made a covetable occupation.

Kurien (2004) chairman of the National Cooperative Dairy Federation of India Limited has stated that, the farmer’s sense of ownership of the cooperative and its brands have been the single biggest ingredient in their unique success against all odds. He has opposed the move to convert dairy cooperatives into public sector units, since the NDDB is a Government Body and such action would be detrimental to the autonomy of the cooperatives. He has stated that the funds of NDDB meant for development of the dairy Cooperatives are being diverted to the subsidiary and joint venture companies to promote NDDB’s commercial interests.

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Rama Prasad (2005)\(^{17}\) in his article “Dairy industry – Milking the milk” has opined that, as India is located amidst major milk deficit countries in Asia and Africa it can easily become a leading exporter of milk and milk products provided it improves the quality and productivity of milk. Also he stated that, since, the average per capita consumption of milk in India is only 214 gms/day as against the world average of 303 gms/day there is lot of scope for the development of the dairy industry in the country.

Periyasami (2006)\(^{18}\) in his study entitled, “Milk production in India”, explains that as the cost production of a liter of milk in India worked out to be lowest in the world. Thus there will be competitive advantage to increase Indian global share of export in dairy sector. Since Indian dairy sector is one of the least subsidized sector in the world it can therefore afford to take an aggressive stand as possible with 15 percent of the world cattle population. India occupies number one position in the world milk production. India became the world leader in milk production in 2001 with a production of 84 million tones.

Wikipedia encyclopedia (2006)\(^{19}\) defines dairy milk as an opaque white liquid produced by the mammary glands of mammals (including monotremes). It provides the primary source of nutrition for newborn mammals before they are able to digest other types of food. The early lactation milk is known as colostrum, and carries the mother's antibodies to the baby. It can reduce the risk of many diseases in the baby. The exact components of raw milk varies by species, but it contains significant amounts of saturated fat, protein and calcium as well as Vitamin C. Cow’s milk has a pH ranging from 6.4 to 6.8, making it slightly acidic.

\(^{19}\) Wikipedia, The Free Encyclopedia 2006, pp22-23
Statistics (2007)\textsuperscript{20} in this book point out that, there are 17 District Cooperative Milk Producers' Unions functioning in the State of Tamil Nadu covering 30 Districts. The Tamil Nadu Cooperative Milk Producers’ Federation is the apex body of 17 District Cooperative Milk Producers’ Unions. The Anand Pattern of milk cooperative system has enabled the producers to get sure market and fair prices for their milk. The milk cooperatives have powerful impact on the rural economic and technological transformation. Due to primary dairy cooperatives the farmer is getting regular income, subsidized cattle feed, artificial insemination, cattle-health services, subsidy for construction of dairy building, milk tester and training on scientific feeding, breeding, which again ensures the income and employment of rural areas.

Anjani Kumar (2010)\textsuperscript{21} in his the study “Milk Marketing Chains in Bihar: Implications for Dairy Farmers and Traders”, has observed dominance of landless, marginal and smallholders in milk production. The continued preference for and strong role of direct sales from producers to consumers, has been observed. The study has also suggested that informal raw milk trading and processing offers good opportunities for milk market agents, the majority of whom were operating at small-scale. The informal trading and processing is an economically viable proposition.

Singh (2010)\textsuperscript{22} “Understanding Value Addition in Indian Dairy Sector: Some Perspectives” concluded that Indian dairy sector has shown tremendous growth in terms of milk production, from 17 million tonnes (1950–51) to 112 million tonnes (2009–10). This transition from deficiency to sufficiency has been achieved by a series of policy interventions by the government. It has been found that in the first phase of ‘Operation

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\textsuperscript{20} Statistics, Dairy India Year Book, 2007, p.102.
\textsuperscript{21} Anjani Kumar “Milk Marketing Chains in Bihar: Implications for Dairy Farmers and Traders”, Agricultural Economics Research Review Vol. 23 (Conference Number) 2010 pp 469-477
\end{flushleft}
Flood’, growth rate of value-added products was 0.93 per cent per annum, but in the third phase, it became 9.10 per cent per annum.

**Tewari Poonam (2011)** in his study titled “A study of opportunities extended to dairy women entrepreneurs under women's dairy development scheme” highlighted that the Dairying is an important livelihood option for small and marginal farmers and landless families as it can be managed by utilizing family labour as well as available crop residue. Moreover, it provides regular income and nutrition to their families. Women play a key role in managing dairy enterprise. Majority of the dairy entrepreneurs had received entrepreneurial training and they found it necessary for running the enterprise. A high percentage of dairy entrepreneurs were getting adequate support from institution. Main marketing facilities as revealed by the dairy entrepreneurs were formation of milk cooperatives and removal of middle man, thereby, enabling the dairy entrepreneurs to directly sell their produce to the cooperative.

**Edhayavarman, (2012)** in his study “Economic analysis of production and marketing of milk in Tamil Nadu: with special reference Madurai district co-operative milk producers' union LTD” concluded the dairy sector holds high promise as a dependable source of livelihood for the vast majority of the rural poor. Liberalization of world trade in dairy products under the new trade regime of the WTO poses new challenges and has opened up new export opportunities for the dairy industry. The dairy sector in India needs to enhance its competitive economic advantage in dairy products in terms of both quality and cost and its credibility in international markets.

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Arora Shweta (2013) in his study “Economics of production and marketing of milk products in cooperative sector” concluded that the study was conducted in Rudrapur and Khatima blocks of the district U.S. Nagar. Ghee and paneer were the two milk products whose study was made in cooperative sector. The cooperative milk product producers are skilled at sales and distribution levels, Customer oriented market research and development should be accorded higher attention by the cooperative sector so as to attract consumer preferences.

Babu (2013) in his study titled “Comparative analysis of distribution cost of milk and milk products in organized sector of Tamil Nadu” revealed that the distribution cost of milk and milk products in Salem District of Tamil Nadu in the private sector was studied. The distribution cost was lower for the co-operative dairy plant for butter only whereas the distribution cost of toned milk, standardized milk, full cream milk, ghee and Skim Milk Powder was lower for the private dairy plant. The private dairy plant incurs less expenditure on salary of staff and cost of transportation as compared to the co-operative dairy plant.

Merlin Sealer Sing (2013) in his study titled “Essential and commercial nature of Aavin milk in Tamilnadu with special reference to Kanyakumari and Coimbatore districts” that brand names “Aavin milk” and “Aavin by products” are very popular brands among the people mainly because of adulteration free production and also doctors recommend it to the patient .In Kanyakumari district 74 percent of the respondents accepted that there is very high demand and 22 percent high demand for this product. But in Coimbatore district 73 percent respondents state that there is a high demand and 13 percent say that there is very high demand for milk and by product.

2.1.2 Review of Literature related to consumers

Lincoln Lampert (1970)\textsuperscript{28} Consumption of milk depends upon the extent to which the consumers are aware of the various aspects of milk namely nutritional values, availability, milk processing and its benefits, type of milk etc., Consumers’ awareness level is influenced by their socio economic profile and also by family, reference group and media. ‘Television (TV) advertisement is effective in creating awareness about presence of bacteria in milk.

Ganguly and Gopal (1981)\textsuperscript{29} in their study on Metropolitan milk markets of India revealed that in Bombay and Calcutta 75 percent of milk was bought by households with low or moderate income but in Delhi and Madras almost half of the milk was purchased by high-income households. In Delhi and Bombay the average household devoted 17 percent of its expenditure to milk products. It appeared that milk and milk products are more important to the people of Delhi and Bombay, as 95 percent of all the households interviewed in these cities bought milk regularly.

Singh and Patel (1986)\textsuperscript{30} studied the effect of socio-economic parameters on the consumption pattern of milk and milk products. A survey of 100 rural and 60 urban households in Murzthan Nagar district of Western Utter Pradesh showed that adult males generally accounted for the largest share in the consumption of milk products than on liquid milk. Consumption of milk and milk products were higher in households with agricultural occupations, keeping dairy animals. It was also higher in rainy season and lowest in summer.


Goswami (1994) examined the consumption pattern of milk and milk products of five district income groups in Shillong town of Meghalaya state with a sample of 200 households drawn from 20 wards. It was observed that with the increase in income, the expenditure on milk and milk products had also increased.

Ghosh (2001) suggest that retailers can play an important role in consumer store choice as consumers would generally choose a store that is located closest to them when all other things (for example price, product variety, brand names) offered by competing stores are equal.

Sharma and Joglekar (2002) in their study on "Marketing of Milk - an opinion survey of consumers perception in Rajahmundry, Andhra Pradesh" included a cross section of consumers covering the area of the Godhavari Co-operative dairy with the sample size of 400 households. The study found that the majority of the families were purchasing milk from private vendors. The location of the milk booths was close to residence or located within a reasonable distance. The supply of milk through polyethylene sachets by home delivery was advantageous. The quality of the milk was primarily judged on the basis of level of fat content in milk.

Prasanna(2003) carried out a study on customer satisfaction rate towards Aavin milk in Coimbatore. The non-probability convenience sampling was adopted to draw a sample of 150 respondents. The study focused on ascertaining consumer preference in purchase of Aavin brand of milk and analyzing the perceived differences of various brands of milk on key attributes and also on identifying measures for improving customer

satisfaction. Purity, taste, thickness, availability, price, service of agents and place of purchase were the criteria used in the study. It was found that Aavin brand was rated high for purity, taste and thickness. Attributes like availability, price and service of agents were also rated good. Other milk brands like Arokya and Amirtha rated the best for the purity and taste respectively.

Kubendran and Vanniarajan (2005)\textsuperscript{35} in their study on "Comparative analysis of Rural and Urban Consumers on Milk Consumption" revealed that with a constant increase in disposable incomes among the strong middle-income class, the scope of marketing of milk is wider. It could be noted that the demand for milk and milk products depends on consumer's willingness and capacity to buy. Since the consumers are not homogeneous, the consumption pattern of milk like quantum of purchase, mode of purchase, source of purchase, brand preference etc., are changing from consumer to consumer. The socio economic profile of the consumers namely income status, occupational position, educational level, sex, age and region are the major determinants of the consumption pattern of milk.

Rajaprabhaker (2005)\textsuperscript{36} in his study ‘A study on consumer preference of Aavin Full cream Milk in Kanyakumari District at Nagercoil Aavin Dairy”, explained the products and the methods of preparation, particularly the full cream Milk. He found that more than 58 percent of the people prefer the full Cream Milk, and so the production increases year after year.

\textsuperscript{35} Kubendran, V and Dr. T.Vanniarajan, "Comparative analysis of Rural and Urban Consumers on Milk Consumption". Indian Journal of Marketing, Vol. XXXV, Number 12, December 2005.

Sarathy (2007)\textsuperscript{37} carried out a study on "A comparative study on brand preference of selected fast moving consumer goods among rural consumers in Erode and Salem Districts". The study revealed that there is a strong brand preference among rural consumers for the FMCG products. So companies aiming at rural market should invest more money and time to build their brand preference, keeping in mind, low penetration pricing, appropriate promotional strategy, value for money product and to build extensive distribution network.

Reddy and Muniraju (2009)\textsuperscript{38} in their article titled "Building brands by helping others win" revealed that brand in means of differentiating a company's products or services from those of its competitors. A good brand helps a company charge premium price for their products or services, since customers prefer to by good branded product and they will be loyal customers. Brand building plays a key role in the era of globalization. There are few companies that think about how their business model can help others win too, in the process of brand building. In near future, almost all the business firms must try to build brands by helping others win.

California Milk Advisory Board (CMAB) (2011)\textsuperscript{39} conducted a study on consumer preference for higher solids milk. The study attempted to know about the preference of the customers towards fluid milk with enhanced nutrients. The study found that 86 percent of the customers reported that they would choose the milk with enhanced nutrition option. Adults reported that they were willing to pay an average of 1.74 dollars more than what they currently pay for milk with enhanced nutrition. Even many new

\footnotesize{\textsuperscript{37} Sarathy, T., "A comparative study on brand preference of selected fast moving consumer goods among rural consumers in Erode and Salem Districts", Project report, Doctor of Philosophy, Bharathiyar University, Coimbatore, 2007.}

\footnotesize{\textsuperscript{38} Sundarsana Reddy, G and Muniraju, M., "Building brands by helping others win", Indian Journal of Marketing, July 2009, pp.21-23.}

\footnotesize{\textsuperscript{39} California Milk Advisory Board (CMAB)“A Study on Consumer Preference for Higher Solids Milk”, Farm journal, Feb. 18, 2011}
channels have been brought to explore consumer’s nutritional dairy products and retailers also play an enormous role in the overall process. The study also reveals that not only the consumers generally like milk with enhanced nutrition, but also would be inclined to buy it regardless of price. For retail dairy cases, milk with enhanced nutrition is a new channel for potential revenue growth. It is a win situation for retailers and consumers.

Nidhyananth and Sugapriya (2011)\(^{40}\) in their study “An Overview of consumer behavior of Aavin milk with reference to Erode District” is carried out with an objective to determine the customer behavior towards Aavin milk products and to find out the customer mentality towards using the service. The research mainly focuses on the factors like quality, consumer preference, price, service, attitudes and experience of consumers. In this study, data are collected from the consumers through questionnaire (interview schedule). 100 samples are selected using convenience sampling. Using the interview schedule prepared, the 100 consumers are interviewed personally and their opinion was collected.

Deepa Ingaval and Thakar (2012)\(^{41}\) made a study on customer preference for milk and milk products. The objectives of their study is to identify the customer preference towards the milk and milk products, to identify the reasons for change in the purchase decision and to find out the most preferred place for product purchase. The study revealed that the customers preferred packaged branded milk and milk products over a period of time from 1991 to 2006. The change in purchase decision was due to marketing factors such as availability, advertisement, product quality and price of the products. It was also revealed that grocery shops, bakeries and sweet markets were the


preferred place of purchase of dairy products, some of them preferred to purchase form
company outlets and milk shoppers.

Silva et.al, (2012)\(^{42}\) in their study on, “Consumer Perceptions on Quality Attributes of Liquid Food Products: An Empirical Analysis Based On Urban Households”, examine empirically the urban consumer perceptions on key food quality attributes, including price, food safety, labeling and packaging for four liquid food products, namely bottled water, pasteurized milk, ready-to-drink fruit juices and carbonated drinks. Given the multidimensional nature of issue, the Perceptual Mapping Method explained in the Multidimensional Scaling multivariate data analysis techniques was employed to estimate and map the variations in consumers’ similarity judgments on the quality attributes.

Jothi Mary(2013)\(^{43}\) undertook a study on A consumer Behavior of Aavin Milk in Trichy. Consumer oriented thinking helps the marketer to define consumer needs from the consumer’s point of view. The present study attempts to bring out the factors leading to the purchase behaviour and perception of consumers in buying Aavin milk. Suitable suggestions were given to marketing environment forces like competitors, who influence consumer’s perception and behaviour from time to time. At present, the market for Aavin milk is good and if efforts were taken to maintain the same level.


Arul and kannan (2013) in their study present the evolution of brand preference of milk among customers in Salem City. Though the price of all branded milks are at par, the customers prefer a particular brand due to some reason. it may be because of the price, quality, service or advertisement provided by branded milks. In order to remain in business an organization must generate enough sales from its products to cover operating costs and post reasonable profits. Considering, therefore, the importance of sales on business survival and the connection between customers and sales, it is expedient for organizations to engage in programs that can influence consumer decision to purchase its products.

GAP ANALYSIS

Most of the studies conducted in dairy industry have focused on the marketing of milk. Only few studies on the operational performance of Aavin dairy unit have been conducted. Hence, the researcher has taken this research titled "A study on operational performance of Aavin dairy unit in Tirunelveli district" to make an attempt to fill the identified research gap.

2.2 RESEARCH DESIGN

Research can be defined as “Logical and systematized application of the fundamentals of science to the general and overall questions of a study and scientific techniques which provide precise tools, specific procedures and technical, rather than philosophical means for getting and ordering the data prior of their logical and manipulation”. Research seeks to find explanations to unexplained social phenomena to clarify doubtful and correct the misconceived facts of social life.

Research design is a plan for collecting and utilizing data to test a hypothesis. It provides an outline of how the research is carried out, and the methods that are used. A research design is a framework or blueprint for conducting the research project, it specifies the details of the procedures necessary for obtaining the information needed to structure and solve research problems.

2.2.1 Significance of the study

Products which have a quick turnover, and relatively low cost are known as Fast Moving Consumer Goods (FMCG). Milk is one of the fast moving consumer goods. Milk is the most essential item for all the age groups starting from infants and today a common expression used in reference to nutrition is the ‘milk is the most nearly perfect food’ No other single substance can serve as a complete substitute for milk in diet.

Milk being perishable commodity, its processing is the best alternative to enhance its quality and also increase the value of the product at each stage. There is need for proper planning to decide the product-mix and level of production for various products to become profitable and viable.

The importance of dairying lies not only in products but also it brings about significant changes in socio-economic structure of rural economy. The National Commission on Agriculture (1976) observed dairying as an additional enterprise for improving the status of rural masses especially weaker sections and should pave path for the advent of much cherished ‘white revolution’ in the country.
2.2.2 Statement of the problem

The success of the dairy unit depends on the capital balance by the State Government and the share capital contributed by the member of the co-operative society. As private trading milk is more profitable, less number of peoples in the co-operative firm and hence there is lack of capital. The success of any dairy unit also influenced by the market potential and the consumer preference. In recent years many high capital intensive private milk producing companies have emerged in the local areas. It provides stiff competition to the Aavin products. As a result, the government is also changing its policy to cater the needs of the consumer, suitable and attractive scheme are introduced. Number of vendors have also increased taking into the service of SHG schemes. More women are employed in this marketing strategy which provides employment opportunity to women which in turn helps on their own.

In Tirunelveli district the consumers face the problems of high price, lack of freshness, irregular supply, poor advertising strategy, poor packaging, Improper quantity of milk and lack of intermediate service. Above problems are included in this research, it is carried out to furnish the solution for these problems and give recommendations to the dairy unit. The highlight of the study is to evaluate the operational performance of Aavin in Tirunelveli district. Hence, the researcher has taken the topic which includes analysing the operational performance including finance and also the consumer attitudes towards Aavin products. The topic is entitled as “A STUDY ON OPERATIONAL PERFORMANCE OF AAVIN DAIRY UNIT IN TIRUNELVELI DISTRICT”
2.2.3 Objectives of the study

For every life objective is very important one. Without objectives one cannot succeed anything. A proper objective leads to success or gain throughout the study. The objectives are

➢ To highlight the milk production and importance of dairy sector Globally, National and state level.

➢ To evaluate the processing structure and milk production in Aavin Dairy unit in Tirunelveli district.

➢ To analyse the operational performance of Aavin Dairy unit in Tirunelveli district.

➢ To ascertain the sources of awareness and preference towards Aavin milk in Tirunelveli district.

➢ To analyse the motivational factors about Aavin milk & milk products.

➢ To examine the perception of milk consumers in Tirunelveli district.

➢ To study the problems faced by the consumers and suggest suitable measure to overcome the problem.

2.2.4 Hypothesis

1. Every consumer either consciously or unconsciously always appraises dairy milk for its quality.

2. The most important expectation of the consumers is the good Aroma of milk.

3. The high significance of quality proves the third hypothesis that the consumer decision behavior is significantly influenced by quality.

4. The significance of high price proves the fourth hypothesis that high price constitutes the major issue with consumers.
2.2.5 Scope of the study

Milk production is based on the type of the milk animal. Buffaloes yield more milk than the cows and the returns on investment are very high because of their high yield and lactation period. The returns from the buffaloes are greater than the returns from the cows. Dairy farming and agriculture have been inseparable parts of man’s life in rural Tamil Nadu. Dairying therefore, generates additional income to the rural people. The cow or buffalo is fed with the low grade surplus by-products of the farm and about 50 percent of the income of the village is from milk. As the state of Tamil Nadu is characterized by considerable heterogeneity in agro climate, resource endowments and economic performance, the production function is here carried out at the district level. Of all the districts in Tamil Nadu, Tirunelveli district is one of the frontline districts in the production of milk. Therefore, Tirunelveli district has been selected for the study.

Tirunelveli district is basically agro based and agriculture is the main occupation of the people. It is situated on the banks of the Tamiraparani river. It offers vast scope for dairy farming, which is spearheaded by the Tirunelveli District Co-operative Milk Producers’ Union Ltd, which is popularly known as “Nellai Aavin” one of the largest dairies in the southern part of Tamilnadu. Hence, the present study is undertaken to analyze the operational performance of Tirunelveli Aavin dairy unit and the consumer perception of Aavin milk in Tirunelveli district. The Aavin dairy unit has emerged as an important income-generating activity and a source of mass employment, this study aims at exploring cooperative dairying in Tirunelveli by evaluating the performance of Aavin dairy unit in terms of its operational and financial management are considered as secondary data. The consumers’ motivational factors, source of awareness, perception and problems related to quality, price, availability, promotional activities and packaging of milk are considered as primary data.
2.2.6 Research Methodology

Designing a suitable methodology and selection of suitable analytical tools are important for a meaningful analysis of any research problem. Purposive random sampling method was adopted in selecting the milk consumers in Tirunelveli District. The sources of primary data to be collected from the field through interview schedule for consumers (Annexure) have been formulated. The source of secondary data includes published annual reports and production records provided by the Aavin dairy unit in Tirunelveli District.

2.2.7 Sampling design

Since the objective of the study is to find out the operational performance of Aavin dairy unit and the perception of consumers and their problems. In Tirunelveli district there are 11 Taluks. The research has taken 600 samples of milk consumers in Tirunelveli district. To study the operational performance of dairy unit, the researcher has taken Aavin dairy unit in Tirunelveli. The secondary data have been taken from the records of Aavin dairy unit in Tirunelveli district.

2.2.8 Source of data collection

The data were collected from both primary and secondary sources. The primary data were collected from the consumers with the help of a structured interview schedule (Annexure) is used for the study to find out the perception of milk consumers in Tirunelveli District. The researcher visited in and around place of Tirunelveli to meet the milk consumers.

The secondary data was collected from Aavin dairy unit. The data relating to the milk union were collected directly from the officials of Tirunelveli Co-operative milk producers union (TCMPU). Apart from these, necessary information has been collected from
various books, journals, district Collectorate, Tirunelveli, office of the Assistant Directorate of Livestock, Tirunelveli, various insemination centres in Tirunelveli district, Office of the Assistant Director of Statistics, Tirunelveli and the Directorate of Animal Husbandry Chennai have also been used throughout this study.

2.2.9 Tools of Analysis

The data were suitably classified and analysed keeping in view the objectives of the study. For the purpose of the analysis, statistical tools like Trend analysis, Compound growth rate Ratio Analysis, Correlation Analysis, Weighted Average, F-test, Factor analysis, Multiple Regression, Correlation coefficient of determination, exponential growth rate, ANOVA and simple percentage analysis were used to interpret both primary data and secondary data.

The trend and compound growth rates are computed for the world, India, Tamil nadu and Tirunelveli milk production by adopting the linear and semi-log trend models. Trend analysis is the easiest way to evaluate the performance of a firm and to compare its present ratios with the past ratio. When financial ratios over a period of time are compared, it is known as the trend analysis.

In order to analyse the profitability position of Aavin dairy unit the ratio analysis, trend percent, Correlation coefficient of determination, exponential growth rate and the correlation has been used. Ratio Analysis is one of the most powerful tools of analysis and interpretation of financial statements. A ratio is simply one number expressed in terms of another. It may be defined as, “the relationship between two accounting figures, expressed mathematically”. To be more specific, the term ratio is used to describe the significant relationships, which exist between figures shown on a Balance Sheet, in a profit and loss account or in any other part of the accounting organization.
To examine the socio-economic conditions of the sample consumer’s simple percentage analysis was used. When data from a survey are cross-tabulated, percentages help the researcher to understand the nature of the relationship by allowing relative comparison. The total number of respondents or observations may be utilized as a base for computing the percentage in each cell. Selecting either the row percentages or the column percentages will emphasize a particular comparison or distribution.

To analyse the source of awareness of Aavin milk and the opinion about Aavin by products, the one way analysis of variance has been administered. The resulted mean score of the factors and the respective ‘F’ statistics has been tested for its significance and the levels of awareness chosen are five and one per cent.

To examine the factors motivating the consumers to Aavin milk, Factor analysis and regression was used. The general purpose of factor analysis is to summarize the information contained in a large number of variables into a smaller number of factors. Factor analysis refers to a number of diverse techniques used to discern the underlying dimensions or regularity in phenomena. The statistical purpose of factor analysis is to determine linear combinations of variables that aid in investigating the interrelationships.

Index method was used to know the consumers perception and impact of the problems towards Aavin milk. Perception towards Aavin milk index shows the relative likelihood that a group of consumers will purchase a particular product or service within a given time period, with 100 as average.

Regarding the expectations of consumers towards Aavin milk, F-test was used. The F-test is a procedure for comparing one sample variance to another sample variance. The F-test determines whether there is more variability in the scores of one sample than in the scores of another sample. To obtain the F-statistic, the larger sample variance is divided by the smaller sample variance.
2.2.10. Operational definition of concepts

The various operational definitions are given below

2.2.10.1 Aavin

Aa or அ is one of the many one-letter words in Tamil. அ means cow. மார் means milk. 'Aavin paal' மார் பால் translates to cow's milk மார் பால்.

2.2.10.2 Artificial insemination

It is a method of deposition of semen in the female reproductive tract of animals by artificial means. The frozen semen is preserved in the liquid nitrogen containers, kept in the societies. The secretary or the tester of the society is trained to carry out the artificial insemination of animals.

2.2.10.3 Buffalo

It is a variety of milk animal with black colours other than cows and found in selected areas.

2.2.10.4 Butter

Butter may be defined as a fat concentrate which is obtained by churning cream, gathering the fat into a compact mass and then working it. It is product prepared from milk it contains 76 percent of milk fat, 1 to 3 percent of non-fat milk solids and moisture content of as high as 23 percent or as low as 15 percent.

2.2.10.5 Cross bred Cow

A variety of milk animal obtained through crossing a high yielding variety stud bull or forms its semen. Jersey, Holistin, Fristin is examples.
2.2.10.6 Consumer satisfaction

“Consumer satisfaction is the level of a person’s felt state resulting from comparing a product’s perceived performance (or outcome) in relation to the person’s expectations”.

2.2.10.7 Dairy

A dairy is a facility for the extraction and processing of animal milk- mostly from goats or cows, but also from buffalo, sheep, horses or camels roe human consumption. As an adjective, the word dairy describes milk-based products and processes.

2.2.10.8 Dairy cooperatives

Dairy cooperatives are organisations formed and organised by the milk producers. Cooperatives as a form of business organization are distinct from the more common investor-owned firms. Both are organized as corporations, but investor-owned firms pursue profit maximization objectives, whereas cooperatives strive to maximize the benefits they generate for their members.

2.2.10.9 By-Products

A dairy by-product may be defined as a product of commercial value produced during the manufacture of a main product. The by-products of the dairy industry are Cream, Skim milk Butter, Buttermilk, Ghee, Lassi, flavoured milk, paneer and cheese

2.2.10.10 Ghee

Ghee is the name given to the product which is obtained by heating and boiling the butter to such an extent that all the water contained in the butter is driven out completely and only the clean pure butter fat is left, which is further purified by straining it through cloth, so as to free it from solid sediment.
2.2.10.11 Indian Dairy Corporation (IDC)

National Dairy Development Board (NDDB) is the implementing agency for the dairy development schemes. Indian Dairy Corporation is in-charge of financing the schemes. Since the existence of two agencies affected the efficient functioning of the programme, in 1987, IDC has been merged with NDDB. Now all the activities are carried out by NDDB only.

2.2.10.12 Indigenous Cow

It is a local variety of milk animal commonly found in major part of Tamil Nadu State.

2.10.13 Khoa

Khoa is fermented milk like dhai it is floured and coloured with fruits.

2.2.10.14 Milk

Milk may be defined as the whole, fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy milch animals, excluding that obtained within 15 days before or 5 days after calving or such periods as may be necessary to render the milk practically colostrums-free, and containing the minimum prescribed percentages of milk fat and milk solid-not-fat.

2.2.10.15 National Dairy Development Board (NDDB)

National Dairy Development Board, Anand, Gujarat is the implementing agency of the scheme operation flood of the Government of India. Dr. V. Kurien is the man behind the success of this organization. Now it is headed by Dr. Amrita Patel.
2.2.10.16 Operational performance

This is a measure of how well the company is doing. Many different measures, such as expense ratios, sales performance and policy terminations are taken into consideration when evaluating operating performance.

2.2.10.17 Pasteurization

The term pasteurization, as applied to market milk today, refers to the process of heating every particle of milk to at least 63°C (145°F) for 30 minutes, or 72°C (161°F) for 15 seconds (or to any temperature-time combination which is equally efficient), in approved and properly operated equipment. After pasteurization, the milk is immediately cooled to 5°C (41°F) or below. Pasteurization is done to render milk safe for human consumption by destruction of cent per cent pathogenic micro-organisms and to improve the quality of milk by destruction of almost all spoilage organisms (85 to 99 per cent).

2.2.10.18 Procurement

Procurement is the function of collection of milk from the milk producers by the dairy co-operatives.

2.2.10.19 SMP (Skimmed Milk Product)

Milk is the form of powder can be preserved for long period and can be easily transported. Powdered milk is made by concentrating milk.

2.2.10.20 Society

Milk Producers’ Cooperative Societies are referred to as societies/MPCS. Unless otherwise specified, society refers to Milk Producers’ Cooperative Society alone.
2.2.10.21 Solid (But) Not Fat (SNF)

The protein, sugar and ash or salts of milk are termed, as ‘solid-Not-Fat’ (S.N.F)
Buffalo milk has more S.N.F than cow milk.

2.2.10.22 Standardized milk

This is milk who’s fat and/or solids-not-fat content have been adjusted to a certain
pre-determined level. The standardization can be done by partially skimming the fat in the
milk with a cream separator, or by admixture with fresh or reconstituted skim milk in
proper proportions. Under the PFA Rules (1976), the Standardized Milk for liquid
consumption should contain a minimum of 4.5 per cent fat and 8.5 per cent solids-not–fat
(SNF) throughout the country.

2.2.10.23 Total sales

Total sales include sale of milk procured plus sale of by-products.

2.2.10.24 Toned milk

Toned Milk (also called Single Toned Milk) refers to milk obtained by the
addition of water and skim milk powder to whole milk. In practice, whole buffalo milk is
admixed with reconstituted spray dried skim milk for its production. Under the PFA
Rules (1976), toned milk should contain a minimum of 3.0 per cent fat and 8.5 per cent
solids-not-fat (SNF) throughout the country.

2.2.10.25 Union

All the Milk Producers’ Cooperative Societies in the district form a District Level
Milk Producers’ Cooperative Union. Tirunelveli District Cooperative Milk Producers’
Union Limited is referred to as union/TDCMPU Limited in the study.
2.2.11 Area of the study

The following geographical areas of Tirunelveli district have been included for the study. The following are the details of various places. Tirunelveli Town, Tirunelveli Junction, Tirunelveli Pettai, Palayamkottai, Surandai, Alangulam, Vasudevanallur, Sivagiri, Puliangudi, Kadayanallur, Tenkasi, Valliyur, Nanguneri, Panagudi, Thisayanvilai, Kalakadu, Ambasamuthiram, Kadayam, Karukurichi, NGO ‘A’ Colony, Tiruvenkadam, Vadakarai, Melappalayam, Shenkottai, V.K.Puram and Sankarankovil.

2.2.12 Period of the study

Primary data were collected from the milk consumers. The study was undertaken during the months from April 2011 to March 2012. The secondary data were collected from the union for a period of from 2002-2003 to 2012-2013.

2.2.13 Limitations of the study

1. Greater difficulty was faced by the researcher in collecting financial data from the union as the compilation of various account statements were not made in time. Data collection consumed enormous time than stipulated.

2. The study, which is mainly based on secondary data collected from the union, starting from the year 2002-2003 was restricted till the year 2012-2013 as the audit of accounts was not completed for the later period.

3. Since the data for by-product sales were not maintained properly by the union, the available data from the year 2006-2007 was restricted till the year 2012-2013.

Conclusion:

This abstract of the research study in second chapter gives a short survey of literature related to the topic and the research design which includes the objectives of the study, and the mode of research adopted.