1.1 INTRODUCTION

India is predominantly an agrarian economic country with a population of 1,220,200,000 (1.22 billion) as of the census of 2012. Most of the people living in rural areas depend on agriculture and animal husbandry and allied activities for the livelihood. Dairy sector contributes significantly in generating employment to the landless labourers of rural India. “India recorded peak production of milk at 132.43 million tonnes (MT) in 2012-13, becoming the top milk producer globally according to the pre-budget Economic Survey. Milk production in the year 2011-12 was 127.9 Million tonnes, according to the National Dairy Development Board (NDDB) data. The BJP government's first economic survey stated that India accounts for 17 per cent of world production of milk. The average year-on-year growth rate of milk at 4.04 per cent vis-a-vis the world average of 2.2 per cent shows sustained growth in availability of milk and milk products for the growing population”.

Indian dairy farming has been characterized by co-operatives involving millions of men and women. Indian special products have been broadly are in the categories of dairy and poultry products, vegetables and fruits, spices, cereals, oil seeds, edible oils and certain processed products.

According to ASSOCHAM (Associated Chamber of Commerce and Industry of India) milk production in India is likely to reach 190 million

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1. [www.evi.com](http://www.evi.com)
2. [http://articles.economictimes.indiatimes.com](http://articles.economictimes.indiatimes.com)
tonnes by the end of 2015 and the annual turnover will be Rs.5 lakh crores. With the Planning Commission targeting 4.5 to 5 per cent growth for animal husbandry in the 12th Plan, the World Bank has funded Rs. 1584 crores for National Dairy plan and the sector is expected to witness a healthy growth in the years to come around Rs. 17,300 crores from the National Dairy Plan by National Dairy Development Board (NDDB) for the next 15 years.\(^4\)

India has the credit of being the largest producer as well as the biggest consumer of milk in the world. It also has the world’s largest dairy herd (comprised of cows and buffalos). In 2010-11, livestock generated output was worth INR 2,075 billion (at 2004-05 prices) which comprised 4 per cent of the GDP and 26 per cent of the agricultural GDP.\(^5\) Being the world’s largest producer and consumer of dairy products, India represents one of most lucrative dairy markets. The International Market Analysis Research and Consulting Group (IMARC), one of the world’s leading research and advisory firms, finds that the sales of dairy products in India will nearly double its size from INR 2.6 Trillion (US$ 60 Billion) in 2011 to around INR 5.1 Trillion (US$ 115 Billion) by 2016.\(^6\) As per the latest.

Statistics of National Dairy Development Board (NDDB), the dairy cooperative network in the country includes 177 milk unions covering 346

\(^4\) [http://dairyshow.in](http://dairyshow.in)

\(^5\) [http://www.dairyfest.in](http://www.dairyfest.in)

\(^6\) [http://www.allmarketresearch.com](http://www.allmarketresearch.com)
districts and over 1, 33,000 village-level societies with a total membership of nearly 14 million farmers.\(^7\)

Growing health consciousness and awareness for healthy nutrition have increased consumer demand for foods of superior health quality. Increasingly, medical and nutritional researchers have been linking food components to disease prevention and health enhancement. Due to today’s upward consumer awareness and interest to follow healthy nutrition and dietary strategy in achieving health benefits from foods beyond their basic nutrition, the market for value added foods has expanded manifolds. Today’s consumers are increasingly seeking functional foods for their health and well-being as means of nutritional intervention in disease prevention. Dairy products enriched with the health attributes of functional ingredients would be safe and viewed as potential novel foods for health promotion in the next few years. However, the level of health claim with optimum sensory and textural properties of such foods has yet to be investigated.

India’s production of milk has phenomenally increased over time with significant technical, policy and institutional support. This has led to significant changes in the Indian dairy sector. In fact, the Indian dairy sector has undergone significant structural changes over time and some interesting patterns are unfolding along the milk value chain. With the increase in income and urbanization, the demand for milk will increase further. The domestic demand of milk could be 209 million tonnes in 2026-2027, up from

\(^7\) http://www.dairyfest.in
127.3 million tonnes in 2011-2012. Due to the existing growth rate of milk production during the last decade, India will be self-sufficient in milk by 2026-2027.  

Tamilnadu ranks eighth in the milk production and is well on the way towards achieving ‘Second White Revolution’. Milk production in the state during 2012-2013 was 1.82cr liters per day. The value of milk produced in Tamilnadu is more than one and a half time of value of paddy annually produced in the state. In Tamilnadu milk group contributes more than 43% share in the value of output from Livestock sector. Consumers’ buying behaviour is highly influenced by their attitude, cultural, demographic, social and psychological factors. Some consumers are deeply attached towards certain brands due to certain attributes like quality, taste, price and other factors. The study is undertaken to analyse the attitude and the perception of consumers towards various brands of milk and dairy products.

1.2 IMPORTANCE OF THE STUDY

In the light of the increasing demand driven by the growing population, higher incomes and more health consciousness it was observed that there is a slowdown in the growth chart of the dairy industry. Based on the estimates by the National Dairy Development Board (NDDB), the demand for milk is likely to reach 180 million tonnes by 2022. To supply milk to such a massive market, an average incremental increase of Five

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8 http://www.thedairysite.com
9 http://agritech.tnau.ac.in
million tonnes per annum over the next 15 years is required viz., a doubling of the average incremental rate achieved over the past 15 years. In the absence of sufficient increased production, India will need to import milk products from other countries. In such an eventuality, the huge volume required to be imported will affect global milk prices. Therefore it is all the most necessary increase milk production and local dairy development.

Traditionally, the policy environment has favoured the expansion of cooperatives, which ultimately ejected the private sector. However, liberalization of the sector in recent years had encouraged private investment in dairying. In 2002, the milk and milk products order (MMPO) ushered in major policy changes which were friendly to the private sector and a momentum of activity had started at that time. Large Indian and multinational corporations, such as Reliance, Pepsi and Coca-Cola, are planning significant investments in the dairy industry.

Nowadays, both the private sector and the cooperatives drive the value chains. Because of the functioning of the unsuccessful cooperatives in the country, other models of dairy farmer organizations are being explored, such as mutually aided cooperative societies (MACS) and producer companies.

Millions of small and marginal farmers in dairying who own two to three animals and produce an average of five liters comprise a critical portion of India’s dairy industry. Livestock development in general and dairy
development activities in particular are key components of pro-poor
development strategies because livestock distribution is much more equitable
than land distribution. The following characterizes India’s dairy farming and
its relevance to inclusive growth:

- Small and marginal farmers own 33 percent of land and about 60
  percent of female cattle and buffaloes.
- Some 75 percent of rural households own, on average, two to four
  animals.
- Dairying is a part of the farming system, not a separate enterprise.
  Feed is mostly residual from crops, whereas cow dung is important
  for manure.
- Dairying provides a source of regular income, whereas income from
  agriculture is seasonal. This regular source of income has a huge
  impact on minimizing risks which is earned through agriculture.
  There is some indication that areas where dairy is well developed
  have less incidence of farmer suicide.
- About a third of rural incomes are dependent upon dairying.
  Livestock is a security asset to be sold in times of crisis.

Demand for dairy products in India is likely to grow significantly in
the coming years, driven by more consumers, higher incomes and greater
interest in nutrition. Consumption of processed and packaged dairy products
is increasing in urban areas. Because of the increasing competition from the
private sector, several national and international brands have entered the market and expanded consumers’ expectation of quality – although catering only among a small proportion of the population. In many parts of the country, people still prefer unpacked and unprocessed milk delivered by a local milkman because of its taste and the perception of freshness. The price elasticity for milk is high, thus demand for milk is very sensitive to price changes.

The market size for milk and milk products (formal and informal sector) is estimated at INR 3.6 lakh crores. The organized market is growing at nearly 10 percent value annually. Traditional dairy products account for about 50 per cent of the total milk produced. The organized sector processes an estimated 20 per cent of the total milk output in India. Milk is processed and marketed by 170 milk producers’ unions. Dairy sector contributes 17 per cent of the country’s total expenditure on food and per capita milk consumption is around 276 grams per day. Dairy contributes to 16% of consumers’ spend on food 18 per cent in urban, 15 per cent per cent in rural. Milk procurement price has grown by about 2.5 times in the last decade.\textsuperscript{10}

It is seen that the contribution of agriculture and allied sectors to the national GDP has declined during the past few decades and the share of the livestock sector has increased from less than five percent in the early 1980s to over six percent in the late 1990s. The ‘Operation Flood’ programme,

which was launched during 1970, organizing dairy farmers’ cooperatives in rural areas and linking them with urban consumers created a strong network for procurement, processing, and distribution of milk over a lakh village in rural India. Thus the study of the dairy sector has been considered very important and it was chosen since the development of our Indian economy is dependent on the dairy industry.\textsuperscript{11}

\textbf{1.3 STATEMENT OF THE PROBLEM}

The dairy sector does not maintain the buffalo on par with cows and there is no proper pricing of milk. There is a complete absence of improved breeding facilities, non-inclusion of buffalo heifers (young cows) under the centrally sponsored calf-rearing scheme to the level of cow heifers and also absence of sustained motivation to maintain the buffaloes.

Milk is perishable in nature and therefore requires number of devices to preserve it. It should be kept in proper temperature and also in a hygienic condition. Large quantities of water are required in the processing of milk on a daily basis for production and other technical purposes. The water consumption in a dairy is usually 1000-5000 liters per 1000 liters of milk processed. But the actual requirement may vary between different dairies and is mainly dependent on the production process or the production profile, supplementary or auxiliary processes such as generation of steam, design of

\textsuperscript{11} \url{http://www.slideshare.net}
the refrigeration mechanism involved including domestic use and finally multiple use or reuse.

“The milk production in India is on a small scale and scattered, more over milk is perishable article and requires being disposed of immediately, either as fluid or for preparation of products or for both. Half of the milk produced in the milk is utilized as fluid milk and the rest is converted into traditional milk products. Some portion of milk is used for making special milk products like flavored milk, soft curd milk, fermented milk, standardized milk and recombined are humanized milk”\textsuperscript{12}. In general, water is a precious or very valuable basic resource that belongs to one and all and is not available in unlimited amounts. It is therefore an important cost factor, bearing much significance and hence should be carefully utilized. The design of the water supply system should be such that consumption for each production department and auxiliary processes can be more or less determined in an accurate manner. This helps to avoid major losses or wastages and paves the way for scrupulous and judicious utilization of water.

The milk processing industry is small compared to the huge amount of milk produced every year. Only 10 per cent of all the milk is delivered from some 400 dairy plants. A specific Indian phenomenon is the unorganized sector of milkmen, vendors who collect the milk from local producers and sell the milk in both, urban and non-urban areas, which

handles around 65-70 per cent of the national milk production. In the organized dairy industry, the cooperative milk producers have a 60 per cent market share. The cooperative dairies process 90 per cent of the collected milk as liquid milk whereas the private dairies process and sell only 20 per cent of the milk collected as liquid milk and 80 per cent for other dairy products with a focus on value-added products.

There is little control over milk yield. However, increased awareness of developments like embryo transplant, artificial insemination and properly managed animal husbandry practices, coupled with higher income to rural milk producers should automatically lead to improvement in milk yields. Woes of bad roads and inadequate transportation facility make milk procurement problematic. But with the overall economic improvements in India, these problems would also get solved.

“One of the major reasons for poor shelf life of traditional dairy products is that there exists either no packaging or inadequate packaging. The challenge to the packaging fraternity is to deliver the nutritious dairy foods to the consumer in most economical, hygienic, safe and environmentally friendly packages.”

The milk producers face numerous constraints namely, infrastructural, technical, socio-psychological, economic and marketing. Dairy development is a process that is to be carried out in a cautious manner. Various factors

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are involved in this process, cow, food for the animal, maintenance, medical care; production, storage, package and marketing are some of the identifiable problems in this industry. These factors should be highly considered as milk is consumed right from the children to the adolescence. These products are to be maintained in a good and hygienic condition. Climatic conditions also influence milk production. Cow as well as buffalo milk have demands from the specific and separate category of people. Nutrition for milch animals is also a problem. Thus this industry has multi-facet problems and some major problems of this industry are to be analyzed in this study.

“At present, there are 748 dairy plants and product factories of different sizes in operation under public, private and co-operative sectors in India. Different dairy plants have different systems of milk procurement namely contractor system, co-operative system or the own collection network. Each system has its merits and demerits. The milk procurement by co-operative system has been considered as an ideal system under the existing conditions of milk production. It is expected that through co-operative approach, economy of scale may be introduced in the handling of milk. But, majority of plants are handling milk much below their installed capacity and facing cut throat competition from the vendors, contractors and other players dealing with milk procurement because their low handling capacity, and increasing operational cost in the value addition chain.15

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The success of any product depends upon the consumer’s satisfaction and delightfulness. The product that delights the consumer alone has the brand loyalty and induces them to rely on the same brand repeatedly. Consumer satisfaction is the individual’s perception of the performance of the product or service in relation to his or her expectations.

Behaviour of the consumer is likely to show variation from individual to individual, from product to product and from an individual of one region to an individual of other region. Consumers have drastically different expectations. A consumer whose expectations fall below expectations will be dissatisfied. Moreover the consumer whose expectations are exceeded will be very much delighted. It is purely psychological in nature since it is only an internal feeling about the product which is consumed in spite of such a complex nature. The above mentioned situation raises the issues such as the present and future milk production in the study area, the socio-economic condition (profile) of the respondents consuming milk, the preferences among the consumers about the availability of brands, the different factors that motivate the respondents towards brand preference and the problems faced by the respondents.

However, upward spiraling of prices and lack of fodder resulting in low yield from cattle together with lack of trained and skilled dairy farm labour, lack of proper infrastructure like cold storage facilities and lack of transparent milk pricing system are certain key problems affecting retail
consumption of milk and leading to escalating milk prices in the domestic market.

The pricing policy of raw milk becomes major challenge because it is currently based on the fat content in milk. This encourages the producers to include measurable fat percentage by disturbing the natural composition of milk which compromises to a large extent of its quality. The prevailing hygienic conditions at the village level are far from satisfactory. Improvement in the quality of milk and dairy products originating at the village level is more of a necessity than even before. The sanitary conditions in the village level needs improvement. Food safety and sanitation are absolutely essential in assuring the production of safe dairy products for the consumers.\textsuperscript{16}

1.4 REVIEW OF LITERATURE

This chapter attempts a review of earlier studies so as to pinpoint the hitherto untouched and unexplored areas in the present study. The researcher has chosen milk and certain dairy products which are normally demanded and consumed by the people in our country. At present there is a great demand for milk and dairy products in India. So this study was chosen to explore about consumers’ perception towards dairy products. However, the following are few studies which are worth mentioning.

\textsuperscript{16} http://nmcc.nic.in
So for it was seen in the review of relevant literature covers the studies relating to the cost of milk production, returns on milk, resource-use efficiency in milk production, various value added dairy products, marketing of milk, loyalty, attitude and behaviour of the consumers and also various issues related with milk and dairy products. But no one had carried out the study relating to customers’ perception towards dairy products in Madurai District, Tamil Nadu. Hence, an attempt to study the Customers’ Perception towards Dairy Products in Madurai District, Tamil Nadu.

Kumar et al had pointed out that the considered factors were independent of age, education and income. The brand image seemed to be more important than the origin of the product, since the consumers were attracted by the brands. Hence, brand positioning has emerged as the most challenging job in today’s mature and overcrowded markets.17

Jorin had stated that current trends include greater emphasis on health and safety of foodstuffs and less attention to price, increased demand for low calorie light products and increased demand for organically grown foods. For young people, more concern with enjoyment and less for health, with more meals eaten away from home, and generally an increased demand for convenience foods. The prospects for high quality branded products seem to be good.18

Jagjit had reported that dairy farming had provided a powerful instrument to further economic progress and social change in rural areas. It also has tremendous potential for the creation of mass employment opportunities in rural areas for those with limited education and could therefore, be an important means for the alleviation of poverty.\textsuperscript{19}

Rees had observed revealed that factors influencing the consumer’s choice of food are flavor, texture appearance, advertising a reduction in traditional cooking, fragmentation of family means and an increase in ‘snacking’ etc. Demographic and household role changes and the introduction of microwave ovens have produced changes in eating habits. Vigorous sale of chilled and other prepared foods is related to the large numbers of working wives and single people, who require and value convenience. Development in retailing with concentration of 80 per cent of food sales in the supermarkets is also considered to be important. Consumers are responding to messages about safety and health eating. They are concerned about the way in which food is produced and want safe, ‘natural’, high quality food at an appropriate price.\textsuperscript{20}

Thirunavukkarasu and Prabhaharan revealed that livestock business provided employment even to the neglected and vulnerable groups namely, women and children who otherwise would be idle. The livestock suited well even with landless poor for generating income. The study underlined the need to propagate livestock farming and to incorporate the element of


livestock in any welfare programme implemented to help the poor to tide over the crisis of poverty.21

Chahal and Gill, K.S identified six channels of milk distribution namely.

- Producer – Milk vendor – Consumer
- Producer – Milk vendor – Creamery – Consumer
- Producer – Sweet shop – Consumer
- Producer – Milk vendor – Sweet shop - Consumer
- Producer – Consumer (in rural areas)22

Singh et al. studied factors influencing consumer preferences for milk. They were milk quality, convenient availability, supply in quantity desired, flavor, color, freshness and mode of payment showed higher levels of consumer satisfaction.23

Study of Sundar (1997) revealed that grocery department of Saravana Bava Cooperative Supermarket, Cuddalore was enjoying favorable reception from the consumers of attributes, such as, equality of price, behaviour of sales persons, moving space, location, accuracy in weight, packaging of goods, sufficient number of sales persons and convenient shopping hours. At the same time, their image has dimmed because of the attributes, such as, quality of goods, availability of range of products, variety

of goods, acceptance of returns, credit facility and door delivery and in sales promotional measures.\textsuperscript{24}

Subhash Chander et al. (1999) found that the important buyers of fluid milk in villages are the co-operative societies and milk vendors. The reasons for selling milk to societies are their offering better price paid, convenience in sales, availability of concentrates at cheaper rates, artificial insemination, free vaccination and free technical guidance. The important reasons to sell milk to the milk vendors are the accessibility, advance payment and procurement at the production spot.\textsuperscript{25}

Srinivasan had reported that, a consumer with higher educational level was found to consume more processed products. The quantities of processed fruit and vegetable products were consumed more in high.

Srinivasan had reported that, a consumer with higher educational level was found to consume more processed products. The quantities of processed fruit and vegetable products were consumed more in high-income group. The tolerate limit of price increase identified was less than five percent any price change above this limit, would result in discontinuance of the use processed product. Consumers preferred processed products because of convenience of ready to eat form.\textsuperscript{26}

\textsuperscript{26} Srinivasan, N. and Elangovan, D., Consumer perception towards processed fruits, Ind. J. Mktg, 30 (5-7): 2000, 12-18.
Kamalaveni and Nirmala reported that there is complete agreement between ranking given by the housewives and working women regarding the reasons promoting them to buy Instant food products. They are age, occupation, education, family size and annual income. These factors had much influence on the per capita expenditure on the instant food products.  

Ganeshkumar and Prabakaran found that the cost of production of milk was lower in the case of member milk producers than non-member milk producers. The members were getting higher price because of two axis formula adopted by cooperatives whereas the non-member sold directly to consumers or private agencies failing to receive the remunerative price of milk.  

Aaker opined that, brand awareness was remarkably a durable and sustainable asset. Apart from the conventional mass media, there were other effective means to create awareness viz., event promotions, publicity, sampling and other attention getting approaches.

Saha and Gupta identified that hindrance to profitable milk production was the low productivity of the animals in spite of being fed by sufficient nutritive diet. Concerned efforts should be made towards improvement of genetic makeup of the animals, supported by a number of

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advanced dairy farming practices like knowledge of estrus cycle, pregnancy diagnosis, prevention and treatment of repeat breeding problems and other disorders and provisions of veterinary and health care facilities.\textsuperscript{30}

Ouyang Qian, had pointed out that “in the 1980s, China encountered imbalances in its grain supply, and some cities adopted the policy of exchanging grain for milk. In other words, the Government provided dairy farmers with a certain proportion of feed, based on the number of dairy cattle they owned. In addition, the Government adopted supporting policies that favored suburban rural households raising dairy cattle”. \textsuperscript{31}

In China lack of refrigeration resulted in the habit of drinking milk only in the morning. Dairy processing enterprises have since developed sophisticated distribution systems, providing milk to consumers at any time.\textsuperscript{32}

Beverland studied the level of brand awareness and had suggested that the level of brand awareness is low among consumers. It is indicated that brand awareness could be increased through a relationship-making programme involving targeted marketing and supply chain management.\textsuperscript{33}

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\textsuperscript{31} \url{http://www.fao.org}

\textsuperscript{32} \url{http://www.fao.org}

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Chen expressed a different thought on brand awareness that it was a necessary asset but not sufficient for building strong brand equity. In this view, a brand could be well known because it had bad quality.\textsuperscript{34} 

Suriya Murthi identified the milk marketing strategies. The basic components of milk marketing strategies are consumer’s satisfaction, quality control, organized dairy sector, competitiveness of price of a milk product, quality of milk, milk-grid, producer-consumer interest, ready to use convenience, exploring of new markets, fair and equitable competition and expertise in the management of political-legal environment.\textsuperscript{35} 

Prabhakar Sharma and Joglekar identified that the important sources of milk in the cities are private vendors and societies. Majority of respondents liked only home delivery of milk. Majority of the customers perceived that the price of milk is higher.\textsuperscript{36} 

Genesan et al. mentioned the motivational factors of women entrepreneurs as independence, earning more money and earning social status among family and friends. The important facilitating factors of women entrepreneurs are friends, cooperation of family, networking / contacts, adequate financial support, self-satisfaction and customer support.\textsuperscript{37} 

\textsuperscript{34} Chen, A., Using free association to examine the relationship between the characteristics of brand associations and brand equity. J. Product and Brand Management, 10 (7): 2001, 439-451.


\textsuperscript{37} Ganesan, Dillagh Kaur and Maheshwari, R.C., “Women Entrepreneur Problems and
John and Thirunavukkarasu had revealed that the variables such as educational status of female head, number of economically dependent members of family, community, average hired labour hours and number of large ruminants in animal units significantly influenced the average time spent by women on keeping of large ruminants.\(^{38}\)

Kiresur had concluded that dairying is an important subsidiary occupation to raise the family income along with crop production, particularly for the small and medium farmers and even the landless and agricultural labourers. The small farmers realized greater income with low cost of milk production from all types of animals than the medium and large farmers even though their operating cost was comparatively on the higher side in this category. As returns were higher in small and medium farms they contributed a lion’s share of family income.\(^{39}\)

Rao identified the impact of dairy cooperatives on women’s empowerment. The women’s empowerment affects not only the individual life of women, but also the cooperatives to which they belong. Further, the women have been found to be more conscientious and better workers than

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their male counterparts. They are more responsible and are generally sensitive towards their civic duties.\textsuperscript{40} 

Misra and Pal had identified four types of constraints in dairy farming namely, technical, social, economic and organizational. The most important constraints are repeat breeding problem, lack of support from elders, high cost of veterinary service and distant location of A1 centre.\textsuperscript{41} 

Hymajyothi, et al had concluded that the average milk yield per milch buffalo per day was found to be 4.83 liters. The highest milk yield was obtained by the large herd size milk producers as they incurred high cost of feeding compared to small and medium herd size milk producers. The highest net return per liter accrued to the large herd size milk producers and the lowest to the small herd size milk producers. However, if the cost of family labour is not taken into account in calculating the cost of milk production, there is an in significant increase in the net returns which may be termed as family labour income.\textsuperscript{42} 

Sivasubramanian found that the per capita milk consumption steeply increases if the income status increases. This variation in income status is significant in per capital milk consumption irrespective of regions. It is clear that variation is significant on per capita milk consumption in both the

regions. Family size and number of children in a family have negative influence on milk consumption.\textsuperscript{43}

Harbax Chaudhary and Panwar had concluded that the irregular and inadequate supply of cattle feed, poor conception rate in buffaloes, irregular society meetings, delay in payment of milk, and discrepant and discrete testing of fat were the most important constraints as perceived by the male members of the district cooperatives societies milk producer members. The constraints delineated by female members were unsuitable timings for delivering milk in winter season, poor conception rate in buffaloes, irregular society meeting, delay in payment of milk and discrepant and discrete testing of fat.\textsuperscript{44}

Chaudhary and Panwar identified the important marketing problems in dairying as malpractices from society, no provision of advance payment of milk and the considerable distance of the cooperative societies from the home. The important psychological problems are the perception that the society is meant for influential people, lack of knowledge on participation and lack of co-operation and coordination among the members.\textsuperscript{45}

Saha and Jain had identified that the green fodder, feed and farm family labour are still the most important factors affecting milk production.

The landless dairy farmers in the irrigated zone are more efficient than their

\textsuperscript{43} Sivasubramanian M., “A study on per capita milk consumption among consumers”, Indian Co-operative Review, 10(4), April 2003, pp.256-265.


counter parts namely large farmers. The technical efficiency of milk production was found to be around 91 percent signifying high overall efficiency of milk production in the study area.\textsuperscript{46}

Nagaraju et.al had reported that the technological gap of the respondents varies depending upon their involvement in dairying, knowledge on various activities of dairying, active participation in extension programmes and situational factors etc. The independent variables namely education, family education status, herd size, land holding, milk sale, milk consumption, knowledge about improved dairy farming practices and use of communication sources were found negative and had significant relationship with the technological gap of the tribal dairy farmers.\textsuperscript{47}

Prasad had mentioned the direct relationship between intake and milk yield per animal per day. The intake of green fodder, dry fodder and concentrates per animal was the highest for the murrah, followed by the graded and local breeds respectively. However, the size-wise analysis has not revealed the same thing. The differences may be attributed to management practices and supervision. The intake of feed coupled with


better management practices and supervision would increase milk yield in
dairy industry.\textsuperscript{48}

Barthan et al. had concluded that rearing of cross bred cattle for milk
production is a non-remunerative proposition as the returns from the dairy
enterprise fail to cover the total maintenance cost. However the total fixed
costs are made, it is only the variable cost which affects the rate at which the
total cost changes. In the process, it makes variable costs for more
importance in decision making in the short run.\textsuperscript{49}

“The ice cream market growth picked up after de-reservation of the
sector in 1997. Of the total size of Rs 15-16bn, around 30-32% is in the
hands of organized sector valued at Rs 4.9bn, rest all is with the unorganized
sector. Among the major players in this industry Hindustan Lever has a
market share of around 50%, represented mainly by Kwality Walls brand.
Amul with an estimated market share of 35% is rapidly gaining market share
and lastly Vadilal is the player in the national market with 8-9% of the
market share.

\textsuperscript{48} Prasad D.S. “A study on the influence of feed Nutrients and fodders on the milk yield of
buffaloes in Rangareddy district of Andhra Pradesh”, The Andhra Pradesh Agricultural Journal,
\textsuperscript{49} Deapayan Bardhan, R.S.S.Srivastava, Y.P.S.Dabas and T.S.Bhogal , “Economics of milk
production from cross bred cattle in Uttranchal”, Journal of Dairying foods, and Home Science,
With India's per capita consumption of ice-cream - at 200 ml - against 22 liters in markets like the US, being among the lowest in the world, opportunity for ice-cream marketers is abundant”.

Mary M Murphy, Leila M Barraj, Lindsey D Toth, Laura S Harkness and Douglas R Bolster had observed that “dairy products were substantial contributors to daily intakes of selected nutrients of concern in Brazil, although the mean daily dairy product consumption was less than a typical portion. Education efforts in Brazil to raise awareness about the nutritional role of dairy foods may serve to improve overall diet quality.”

The dairy sector in the South Asian countries of Bangladesh, India, Nepal, Pakistan and Sri Lanka is characterized as follows: by small-scale, widely dispersed and unorganized milch animal holders; low productivity; lack of assured year-round remunerative producer price for milk; inadequate basic infrastructure for provision of production inputs and services, and for procurement, transportation, processing and marketing of milk and lack of professional management. Other important characteristics of the dairy sector in these countries are the predominance of mixed crop–livestock farms and the fact that most of the milch animals are fed on crop by-products and residues, which have a very low opportunity cost. In addition, dairy development policies and programmes followed in these countries, including

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those relating to foreign trade, are not congenial to promoting sustainable and equitable dairy development.

Nowadays consumers feel that branded products are of higher quality and so they normally prefer branded products. Branding has been around for centuries as a means to distinguish the goods of one producer from those of another. By creating perceived differences among products through branding and by developing a loyal consumer franchise, marketers create value that can translate to financial profits for the firm.\textsuperscript{52} So, the consumers prefer to purchase certain brands of products which satisfy their needs and expectations.

Kavitha had reported that “brands have become increasingly important for companies. A strong brand is an invaluable advantage for a company and it can be seen as an eternal asset. It is one of the effective ways to compete in a market. It is very important for marketers to understand how consumers learn and a lot of strategic decisions are based on the thought that consumers actually can be taught to prefer some brands and products before others. In order to do this, a large market has to be identified and the market has to “get to know” the consumer in question, in order to be able to reach the consumers in the most effective way. Gender can enable

\textsuperscript{52} Kevin lane Keller,”Strategic Brand Management”, Third edition, Pearson Prentice Hall, 2008, p.no.2, 5
companies to differentiate their brand from their competition and through this brand equity can be achieved.\textsuperscript{53}

Nageswara et.\textadddash;ad had reported that “India is amongst top ten producers in the world for rice, buffalo, milk, wheat, cow milk, fresh vegetables, sugar cane, potatoes, groundnut, pepper mint and buffalo meat. The technological developments, macro-economic reforms and Uruguay Round have contributed to the changes in agricultural Trade. The progress of agriculture has made a lot of changes in the net trading position of India.\textsuperscript{54}

Mahendran and Asan Mohammed had found that “service offered and the machine performance was the influencing factors which induced the customers to buy the product.\textsuperscript{55}

Sailesh V.\textadddash;Marwaha had stated that “the Indian ice-cream market which is growing at around 12 per cent per annum is characterized as a highly seasonal market because of the sharp fall in sales during winter and steep increase in sales during summer. The market is dominated by vanilla, strawberry and chocolate, which together account for more than 60 per cent of the market followed by butterscotch and other fruit flavours.\textsuperscript{56}

\textsuperscript{53} Kavitha kshatriya, Brand Gendering – Adam or Eve. Journal in Marketing & Research, Vol.1, No.1, Sep.2009, pp.60-63
\textsuperscript{54} Dr.Rajkumar & Varsha Dadhich”, Nageshwara M R & S. Srinivas Rao “Growth & Performance of India’s Agricultural Export, Direction of Trade in Indian Agricultural Commodity Exports, Southern Economist, Vol.47, (19), 2009, pp.23
In India, a person consumes, on an average, 300 ml of ice-cream per year. This is partly compared to the world average of 2.3 liters per capita per annum. And countries such as the US (22 liters), Australia (18 liters) and Sweden (14 liters) are clearly devouring softies, and sundaes in far vast quantities. Though per capita consumption of ice-cream is low in the country, it has risen compared to earlier years. Ice cream must contain at least 10% milk fat, and at least 20% total milk solids, and may contain safe and suitable sweeteners, emulsifiers and stabilisers, and flavouring materials.57

Kalaiselvi, P. and Somasundaram, M, had expressed that today, Indian dairy industry is rapidly growing, trying to keep pace with the galloping opportunities galore to entrepreneurs worldwide, who wish to capitalize on one of the world’s largest and fastest growing market for milk and milk products. The Indian dairy industry is rapidly growing, trying to keep pace with the galloping progress around the world.58

According to Bilal Mustafa Khan and Saima Khan, outline how successful experienced brands can be created where experience acts as a bulwark against determined competitors by providing a strategy edge and differentiation.59

57 RD Kokane, Vice-chairperson of the IDA, West zone, Report by Bhavya Dore, Hindustan Times, November 21, 2011
Rameshkumar and Jai Yashwant Advani had stated that brand functional benefits, brand trust, price consciousness and genetic influence on brand loyalty. They also found that brand loyal consumers are more concerned with quality than price, are heavy spenders and are slightly more store loyal also. Pioneering brands may have dominated the market for several decades in an emerging market like India, which has been experiencing open economy for over just a decade.\footnote{Ramesh Kumar S.
and Jai Yashwant Advani, "Factors affecting Brand Loyalty: A study in an Emerging Market on Fast Moving Consumer Goods” Indian Institute of Management, Bangalore, p.no.373, 377}

Amit Kumar, Ranjit Kumar & K.H. Rao has explained that “the top ten milk producing states of Uttar Pradesh, Rajasthan, Punjab, Andhra Pradesh, Gujarat, Maharashtra, Madhya Pradesh, Bihar, Tamil Nadu and Haryana accounts for more than 80 per cent of India’s milk production. Dairying is an important source of income for 75 million rural families which account for around 98% of milk production.\footnote{Amit Kumar, Ranjit Kumar and K.H.Rao, Enabling Efficient Supply Chain in Dairying using GIS: A case of Private Dairy Industry in Andhra Pradesh state “Indian Journal of Agricultural Economics”, Vol.67, No.3, July-September 2012, pp.395.}

Sumesh Raizada had stated that “A strong brand not only helps a customer to recognize a product, but it also imparts a sense of responsibility and commitment within an organisation. A successful brand has to begin with the corporate culture and extend it to all its stakeholders including the customers and channel partners. Sales person’s and channel partners’
training and understanding of a brand are essential so that they are able to promote the brand with sincerity and dedication.\textsuperscript{62}

Alagh had stated that “milk production has been increased from 21.2 Million tonnes in 1968-69 to 121 Million tonnes in 2010-2011. Indian Dairy industry had seen a manifold expansion to the extent of US $ 70 billion. Moreover, the estimated milk demand in India is 128 million tonnes by 2020\textsuperscript{63}.

Anne T. Coughlan et al stated that “Amul (whose marketing organization is Gujarat Co-operative Milk Marketing Federation Limited) exports its product to the United States and Middle East. The entire operation is carried out with clock-like precisions, since the temperature in India is normally hot and hence maintenance of cold chain for the transportation of milk is essential. The co-operative dairies have ensured this so well that even during natural calamities such as flood or cyclone, milk supplies are seldom affected. The average Indian gets his milk supply early in the morning, even if he fails to get his newspapers\textsuperscript{64}.

\textsuperscript{63} Alagh, Y.K”Beyond the 12th Plan Approach”. Indian Journal of Agricultural Economics, Vol.67, No 1, Jan-Mar 2012, pp.1-8.
2010). Nonetheless, encompassing a wide geographical area and reflecting different political system, differing levels of economic development, social systems, and changes in taste, preferences and traditions, the approach to dairy development has varied widely from region to region in India. However the consumer prices of milk in India are still comparable to one of lowest in the world due mainly to un-remunerative and unattractive price offered to our dairy farmers for their milk produce. This is also owing to the fact that their purchasing power, and the demand for the milk are not able to expand in line with the increasing milk production.65

According to “Indian dairy Industry Analysis, India is the world’s largest milk producer accounting for around 17 per cent of the global milk production. Besides, it is one of the largest producers as well as consumers of dairy products. Due to their rich nutritional qualities, the consumption of dairy products has been growing exponentially in the country. The government is taking several initiatives and running plans and programs like National Diary Plan and Intensive Dairy Development Program to meet the growing demand for milk in the country.66

According to Rajagopal “Brands express themselves in terms of tangible and intangible elements. Brand manifestation may be defined as an integration of customer centric and market oriented attributes including adherence, popularity, ability to maintain price point, portraying social and

66 RNCOS, Published Date Feb, 2012.
cultural values, and competitive advantages of the brand that lead to reveal the emotions associated with the brand”.

Ramanjaneyalu. N (2012) studied consumers’ behaviour and dealers’ perception towards Nandini brand in compare with other competitors’ brands. To excel in the highly competitive business the company needs to evolve their production, marketing and pricing strategies effectively. For doing this a clear perception about consumer preference with regard to product and service quality and price is of utmost importance.

According to Mohit Jamwal et. al “Consumers have a tendency to expect highly advertised brands to offer higher quality products than generic products or brands they have not seen before. In grocery stores, for example, consumers are often presented with a mix of options for individual products, ranging from highly advertised and recognizable brands to generic products. Grocery store shoppers are likely to view the higher-priced "name brands” as superior to store brands, even if both brands contain the same ingredients or are manufactured in the same factory”.

According to Charles Mittelstadt, positioning refers to how you want your brand ‘thought about’ in connection with the competitors in its product category. It needs to be specific that your brand aimed at specific target

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68 www.researchgate.net
69 Mohit Jamwal, Dr. Akhilesh Chandra Pandey “A Study on measuring customer satisfaction of Aanchal’ milk” (A Member Milk Union of UCDF Ltd.), HNB Garhwal University, Srinagar Garhwal Uttarakhand,
“audience”. A successful brand positioning strategy concentrates on finding out the strong position in customer’s mind and then sitting on it, which leads to gain the competitive advantage in the market.\textsuperscript{70}

Jochen Ebert had stated that the per capita consumption of packaged yogurt in India is 300 gm. According to market estimates, some 100 tonnes of packaged, branded curd is sold across India every day. Certain established players such as Mother Dairy, Amul and Nestle take away the lion’s share in market as far as the curd is concerned.\textsuperscript{71}

Although India has grown to be the leading milk producing nation strong growth in domestic consumption has largely consumed the increase. However, the increasing surplus had prompted a long campaign by dairy giants, such as the Gujarat Cooperative Milk Marketing Federation, to lobby for access to the international market too, rendered especially lucrative by a recovery in prices.

India's dairy trade prospects point to the country's growing surplus, which stands to widen further through a national dairy plan expected to double output in 15 years, and increase to 65 per cent from 30 per cent, the proportion of the milk surplus handled by large dairy groups.\textsuperscript{72}

The Indian dairy sector ranks first in the world with its 185.2 million cattle and 97.9 million buffaloes, accounting for about 51 percent of Asia’s

\textsuperscript{70} Saloni Pawan Diwan & Jain M.K, Brand positioning, Lecturers in Kurukshetra University, Haryana Indian Journal of Marketing, Vol.43, No.5, May 2013.
\textsuperscript{71} Cover story on Danone, The Big League, Outlook Business, 11th May 2013, pp.28,30.
\textsuperscript{72} Mixed Outlook, May 2, 2013, www.agrimoney.com
and about 19 percent of the world’s bovine population. Currently, dairies in India are planning capacity addition. This is because of the rise in milk production, and the availability of skimmed milk powder (SMP) and whole milk powder (WMP). The 116.68 billion capacities Gujarat Cooperative Milk Marketing Federation (GCMMF), which markets dairy products under the Amul brand name, procured roughly 15 per cent more milk in 2012 than in 2011.73

Connie Weaver, Ramani Wijesinha, Deirdre McMahon and Lisa Spence have revealed that “The primary role of milk is to nourish the infants of a species. The consumption of animal milk is a by-product of animal domestication, which consumption and its effects on growth and bone health were likely to have been of considerable importance while its effects on chronic diseases later in life had limited relevance to reproduction and survival. In contrast, for contemporary human populations, while childhood growth and bone strength are important for health, it is the effects of milk and dairy consumption on individual well-being and on chronic diseases and their associated economic costs that are of greater relevance (Elwood et al., 2008)”.

Joel Fiegenbaum and Lio Eduardo Rohenkohl, J, had stated that “that for the dairy products sector, opportunities have been consistent with the strategies of differentiation and segmentation of products within the market.

73 Dr.I.Satya Sundaram,”Dairies on Expansion Spree”, Business & Economics-Facts for you, EFY Group Publication, July 2013, pp.14  
The major challenge has been an attempt to reduce costs while increasing the quality of inputs.  

Roland L Weinsier and Carlos L Krumdieck had observed that it is unclear whether dairy foods promote bone health in all populations and whether all dairy foods are equally beneficial. Dairy foods varied widely in their content of nutrients known to affect calcium excretion and skeletal mass. Foods such as milk and yogurt are likely to be beneficial; others, such as cottage cheese, may adversely affect bone health. 

Peter Huth, J. and Keigan M.Park had observed that “there is no association between the intake of dairy products and increased risk of CVD, coronary heart disease, and stroke, regardless of milk fat levels. The cheese intake lowers Low density lipoproteins (LDL) compared with butter of equal milk fat content”.

Gujarat Co-operative Milk Marketing Federation Ltd. (GCMMF), which owns the well-known Amul brand, gave a boost to its growing ice-cream business with the launch of two innovative ranges of ice-creams. One of the products was Amul ProLife Probiotic Wellness Ice Cream that encapsulated the benefits of probiotic culture, which aids digestion, targeted at the growing segment of health-and calorie-conscious consumers.

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Realising the exponential growth in the number of diabetes patients who crave for ice cream, over sixty million by 2007, the company specially created sugar-free, low-fat diabetic products where sugar was replaced with low-calorie sweeteners. This product contains about 50% less fat and half the calories of the normal ice-cream. Additionally the sugar-free range was supplemented with probiotic culture to aid digestion and health improvement. The company received several awards for these product innovations.  

VISHITA KHANNA has expressed that “The survey conducted by them in certain cities of Gujarat revealed about the perception of packaged dahi and Homemade dahi amongst respondents on various parameters like cost, Health, consistency, convenience, storage, time etc. It was revealed that the customers were realizing the difference in homemade and purchased dahi and other dairy products but they did not know the reason for this quality difference was due to improper practices”.  

Fazlollah Kazemi and Malihe smaeili have examined the role played by media on consumer brand choice of Cadbury Dairy Milk. They found that 37.7% of the consumers prefer Cadbury Dairy Milk more than other brands of chocolate.  

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Bhagyashree S. Kunte et.al has reported that “The major issues revealed were related to lack of fodder and concentrates, scarcity of veterinary and diagnostic services, lack of information and technological awareness. These were common issues faced by dairy farmers in most of the regions of India. Some of the issues were area specific like in Assam milk and milk products were not the components of daily consumption basket of people in the state which is not the scenario in other states of the country”81.

1.5 SCOPE OF THE STUDY

The study covers the attitude and perception of the consumers towards various brands of milk and dairy products in Madurai district. This will be of immense use to the marketers in dairy industry. This study will help the private brands to improve and to bring some innovation in their products which will fulfill the needs and desires of the consumers. Moreover this study will help the policymakers to frame the policies to improve the productivity of milk based on the increasing demand for milk and dairy products.

Presently, the dairy industry is a flourishing industry of the country but things were not all the same before AMUL (Anand Milk Union Limited) came into existence in 1946. This incident provided a new impetus to the dairy industry of the country and since then the industry has not looked back.

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The quick progress that the industry is observing proves to be highly beneficial for the dairy technologists of the country who are getting more job opportunities in industries such as dairy technical consultancy and equipment manufacturing. There are a number of dairy technology courses offered by a number of institutes and universities in India at all levels of academics.\textsuperscript{82}

The demand of milk and milk products in India is projected to increase to 191.3 million tons in 2020. At the existing rate of growth in milk production, in the next decade, supply will fall short of the demand. The increase in domestic demand of milk, at the international level, opened new scope of international trade for the Indian dairy sector.\textsuperscript{83}

Most of the women entrepreneurs in India are involved in dairying and many SHGs (Self Help Group) earn by engaging themselves in dairying especially in rural areas. The farmers are also involved in dairying besides their agricultural occupation in order to cope up with the little income which is earned through agriculture. It provides more employment opportunities to packing industries by way of innovative and attractive packing in value added dairy products. It provides greater source of revenue to our country by way of exporting value added dairy products.

\textsuperscript{82} http://entrance-exam.net
\textsuperscript{83} https://www.merar.com
1.6 OBJECTIVES

The study has been carried out in order to know the consumption pattern of milk and milk products in Madurai district with the following objectives.

The following objectives have been framed for the study.

1. To study the profile of dairy sector at the global, national, state and district levels.
2. To examine the socio-economic profile of the respondents.
3. To discuss the consumption pattern of the respondents towards milk and dairy products
4. To analyze the brand preferences and influencing factors of the respondents towards dairy products
5. To examine the satisfaction level of the respondents
6. To go into the problems faced by the respondents in dairy products
7. To offer suggestions for the development of the dairy sector.
1.7 HYPOTHESES

Based on the objectives of the study the following hypotheses have been formulated and tested. Seven factors were considered framed for analyzing consumers’ perception which is as follows:

1. There is no significant relationship with the profiles of the respondents, gender, age, educational qualifications, occupation, annual income, marital status and their perception score towards the problems in milk and dairy products.

1.8 OPERATIONAL DEFINITIONS OF THE CONCEPTS

1.8.1 Consumer

An individual who buys the products or services for personal use and not for manufacture or resale. A consumer is someone who can make the decision whether or not to purchase an item at the store, and someone who can be influenced by marketing and advertisements.

1.8.2 Perception

The ability to see, hear or become aware of something through the senses.

1.8.3 Dairy

A production plant for the processing of milk is called a dairy or a dairy factory.
1.8.4 Dairy Products

A dairy product or milk product is food produced from the milk of mammals. Dairy products are usually high energy-yielding food products. Apart from breastfed infants, the human consumption of dairy products is sourced primarily from the milk of cows, water buffaloes, goats, sheep, yaks, horses, camels, domestic buffaloes, and other mammals. In this study the dairy products refer to milk, milk biscuit, milk chocolate, curd, ghee, butter, paneer, ice-cream and flavored milk.

1.8.5 Skimmed Milk Powder

Skimmed milk powder has an extremely low fat percentage (0.5%). Through the method of spray, drying, skimmed milk is obtained. In powder form it is creamy white in color and smooth to the touch. When mixed with water it reconstitutes easily. Skimmed milk shall have vitamin A added so that each quart of food contains not less than 2,000 international units of Vitamin A.

1.8.6 Whole Milk Powder

Whole milk powder is white to light cream in color with a clean, pleasing taste. Typically, dry whole milk is obtained by removing water from pasteurized, homogenized or non-homogenized milk. It may alternatively be manufactured by blending fluid, condensed or nonfat dry milk with liquid or dry cream or with fluid, condensed or dry milk, provided the composition of the whole milk powder conforms to the standard of
identity, which says it must contain between 26 per cent and 40 per cent milk fat (by weight) on an “as is” basis and not more than 5 per cent moisture (by weight) on a milk solids-not-fat basis. By removing moisture to the greatest extent possible, microbial growth is prevented. Vitamin A and/or D fortification of whole milk powder is an acceptable option.

1.8.7 Homogenized Milk

Homogenized milk is milk which has been treated to ensure breakup of the fat globules to such an extent that, after 48 hours of quiescent storage at 45 degree F., no visible cream separation occurs on the milk, and the fat percentage of the top 100 milliliters of milk in a quart, or of proportionate volumes in containers of other sizes, does not differ by more than 10 percent from the fat percentage of the remaining milk as determined after thorough mixing. The word "milk" shall be interpreted to include homogenized milk.

1.8.8 Pasteurization Milk

Pasteurization is a process of heating the milk below its boiling point to destroy the micro-organisms present in it. Pasteurization is the act or process of heating a food, especially a beverage such as milk, to a specific temperature for a specific period of time in order to kill microorganisms that could cause disease, spoilage, or undesired fermentation.
1.8.9 Ultra Heat Treatment

Ultra-high temperature processing (UHT), or ultra-heat treatment, sterilizes food by heating it above 135 °C (275 °F) – the temperature required to kill spores in milk - for 1 to 2 seconds. UHT is most commonly used in milk production, but the process is also used for making fruit juices, cream, soy milk, yogurt, wine, soups, honey, and stews. UHT milk was first developed in the 1960s and became generally available for consumption in the 1970s. It has a shelf life of six to nine months. It was introduced in the U.S. market back in 1993.

1.8.10 Milk Equivalent (Me)

Milk equivalent is a measure of the quantity of fluid milk used in a processed dairy product. Measured on a milk fat basis, it takes about 21.8 pounds of farm milk to make a pound of butter.

1.8.11 Bastion

Anything seen as preserving or protecting some quality, condition, etc is called bastion. Here it refers to the preservation of milk.

1.8.12 Operation Flood

Operation Flood, launched in 1970 is a project of the National Dairy Development Board (NDDB), which was the world's biggest dairy development program, that made India, a milk-sufficient nation, the largest milk producer in the world, surpassing the USA in 1998, with about 17
percent of global output in 2010–11. The operation in 30 years doubled the milk available per person, and which made dairy farming India’s largest self-sustainable rural employment generator. It was launched to help farmers direct their own development, placing control of the resources they create in their own hands. All this was achieved not merely by mass production, but by production by the masses.

1.8.13 Bactofugation

Bactofugation is a process in which a specially designed centrifuge called a Bactofuge is used to separate micro-organisms from milk. Originally the Bactofuge was developed to improve the keeping quality of market milk. At the present time bactofugation is also used to improve the bacteriological quality of milk intended for other products like cheese, milk powder and whey for baby food.

1.8.14 FAIDA

Financial Access for Investing in the Development of Afghanistan (FAIDA) seeks to build a sustainable, diverse, and inclusive Afghan financial sector that can generate and sustain quality employment, and meet the needs of businesses of all size (micro, small and medium enterprise) with a special focus on the agricultural sector and the southern and eastern region. The $108 million program began in February 2011 and ends in February 2016.
1.8.15 Geriatrics

The branch of medicine concerned with the diagnosis, treatment and prevention of disease in older people and the problems specific to aging. From the Greek "geron" meaning "old man" + "iatreia" meaning "the treatment of disease".

1.8.16 Low Density Lipoprotein:

LDL cholesterol is considered as the “bad” cholesterol because it contributes to plaque, a thick, hard deposit that can clog arteries and make them less flexible. This condition is known as atherosclerosis.

1.8.17 High Density Lipoprotein

HDL cholesterol is considered “good” cholesterol because it helps remove LDL cholesterol from the arteries.

1.8.18 Dairy Storage and Shelf Life

Dairy storage and shelf life represents the timeline for the milk from not being deteriorated. It is a period of time that a product can be kept under practical storage conditions and still retains acceptable quality. The only exception is infant formula. Infant food and formula is required to carry an expiration date to ensure that the nutrient value has not deteriorated.

1.9 METHODOLOGY

In this study, descriptive research design was adopted. The researcher has collected both primary and secondary data. Primary data was collected
directly from the respondents with the help of a structured interview schedule. Personal interviewing method was adopted to collect the primary data. The secondary data was collected from the books, journals, magazines, newspapers, periodicals, theses and websites.

In this study, the factors influencing the individuals to prefer the particular brand were studied by taking into certain factors like price, quality, quantity, taste, colour, form, brand image and place of purchase.

1.10 PERIOD OF STUDY

The study covers the period of fourteen years from 2005 -2006 to 2014-2015.

1.11 SAMPLING DESIGN

The study is entitled as Customers’ Perception Towards Dairy Products in Madurai District, Tamil Nadu. A survey was conducted among 400 sample respondents by using a structured interview schedule. Madurai District consists of seven taluks. The selection of 400 respondents was done at three stages by using multi stage random sampling techniques. In the first stage the seven taluks were categorized into urban and rural taluks, and accordingly 3 urban and 4 rural taluks were classified in Madurai district. Then in the second stage two taluks from urban and two taluks from rural were selected by using random sampling technique. In the third stage 400 sample respondents were selected from four sample taluks at the rate of 100 respondents from each of the sample taluk chosen. In order to collect data from 400 sample respondents’ convenient sampling technique was adopted.
1.12 FIELD WORK AND DATA COLLECTION

The fieldwork for the study was collected from January 2014 to June 2014.

1.13 DATA PROCESSING

After the completion of the data collection, the filled in interview schedules were edited properly. A master table was prepared to sum up all the information contained in the Interview Schedules. With the help of master table, classification of tables was done and the classification tables were taken directly for analysis.

1.14 FRAMEWORK OF ANALYSIS

In order to measure the attitude of the respondents towards milk and dairy products, the major problems of the respondents were identified and given in Likert’s Five Point Scaling method.

Percentage analysis, arithmetic mean, standard deviation, co-efficient of variations, Kruskal Wallis test, and Whitney U-Mann test were used for the study. Ranking method was also used. Classification tables helped to analyze the profile, influencing factors, problems faced by the respondents and their level of satisfaction towards the dairy products.

1.15 GEOGRAPHICAL COVERAGE

The study covers the revenue district of Madurai which has 13 blocks namely, Thiruparankundram, T.Kallupatti, Thirumangalam, Kalligudi, Sedapatti, Usilampatti, Vadipatti, Melur, Madurai West, Madurai East, Kottampatti, Alanganallur and Chellampatti.
1.16 LIMITATIONS

Discussions and conclusions for the study pertain to Madurai district. The area of study was confined only to urban areas of Madurai district.

1. Interpretation of results was not weighted to mirror the universe.

2. Some people use only fresh (raw) milk and so it was not possible to collect the opinion of certain brands of milk from the respondents.

3. The respondents were not aware of certain dairy products and certain brands and hence it was not possible to collect the opinions from some respondents about certain dairy products and certain brands.

4. Most of the respondents did not use paneer.

5. Various value added dairy products exist in the market. But only select items such as milk, milk chocolate, biscuits, ice-cream, paneer, ghee, butter, curd and flavored milk are considered for the study due to lack of sufficient time.

6. The brands covered under the study are not comprehensive and only organized players had been taken into account.

7. The factors and the variables defined for the study was based on secondary research only. The factors or variables may not be comprehensive enough to explain the independent variables.

8. Although utmost efforts were taken to ensure the primary research without any bias, certain errors might have crept in inadvertently and such errors such as recording and random errors were only negligible.
9. In some cases, the results may not be statistically valid when the sample size was below 30.

1.17 CHAPTER SCHEME

The report of the study had been organized and presented in six chapters.

The First Chapter deals with the introduction and design of the study.

The Second Chapter deals with the introduction and structure of dairy industry, origin and growth of dairy sector at Global and National level.

The Third Chapter deals with the growth of dairy sector at Tamil Nadu and Madurai District level.

The Fourth chapter deals with the profile of the sample respondents, their consumption pattern and source of awareness of people of the dairy products and about the people who influence the respondents to prefer a particular brand of dairy products.

The Fifth Chapter deals with the problems and satisfaction level of consumers in dairy products.

The Sixth Chapter deals with the perception of the customers towards problems faced in milk and dairy products.

The final Chapter sums up the findings, conclusion, suggestions and scope for future studies.