CHAPTER -2
Methodology and Review of Literature
RESEARCH METHODOLOGY

Research Methodology is an important ingredient of conducting a research work. Research means to search or to find out and examine the topic.

- **P.V. Young**, Says that research is "the systematic method of discovering new facts or verifying old facts, their sequences, interrelationships, causal explanations, and the natural laws which govern them, regarding a social phenomenon."\(^1\)

- **Kerlinger Fred N.**, is of opinion that "Research is a systematic, controlled, empirical and critical investigation of hypothetical populations about the presumed relations among natural phenomenon."\(^2\)

The Advanced Learner's Dictionary of Current English lays down the meaning of Research as "a careful investigation or inquiry specially through search for new facts in any branch of knowledge."\(^3\)

Redman and Mory define research as a "systematized effort to gain new knowledge."\(^4\)

1. D. Slesinger and M. Stephenson in the *Encyclopedia of Social Sciences* define research as, "The manipulation of things, concepts or symbols for the purpose of generalising to extend,

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\(^1\) P.V. Young., *Scientific Social Surveys and Research*, (New Delhi: Prentice-Hall of India, 1975), P. 30-33
correct or verify knowledge, whether that knowledge aids in construction of theory or in the practice of an art."\(^5\)

Research is, thus an original contribution to the existing stock of knowledge making for its advancement. It is the pursuit of truth with the help of study, observation, comparison experiment, analysis and criticised. The search for knowledge through objective, systematic scientific method of binding solution to a problem is research.

**Objectives of the Study**

Keeping in view the importance of dairy industry, this research work has been undertaken with a view to making an analytical study of this fast developing industry for scientific investigation. The main objectives of the present study are to:

1. identity the basic problems being faced by the cooperative dairy sector;
2. understand consumers' needs making right products available at right place and at right price;
3. examine and evaluate the impact of dairy cooperatives of milk produces;
4. analyse the growth of milk products of the Dairy Industry;
5. find out the reasons why some consumers are not buying SARAS brand products;

6. assess the impact of the changing economic environment on dairy industry in general and in Saras products in particular;

7. make certain suggestions for the improvement of organizational and management effectiveness to increase the sales volumes of the dairy products; and

8. to judge the quality and quality control of dairy produce.

Business performance of the Jaipur Milk Union in recent years and its present marketing strategies and marketing problems.

In order to know which income group purchases which type of milk, milk products and what parameters do people attribute to the milk products while making the decision of purchasing.

During the study period, the procurement and sales of milk and milk product of the Jaipur Milk Union would be analyzed and recommendations would be made to increase SARAS brand image and its market share. The proposed study based on an in-depth analysis of data will provide an insight into the current marketing position and its conclusions and useful suggestions will enable the organisations to formulate new marketing strategies and plans.

**Need for the Present Study**

Product planning is systematic decision-making relating to all aspects of the development and management of a firm's products, including branding, packaging, labeling, and product mix decisions.

Product development includes a numbers of decisions, normally, what to manufacture or by whom to have its packaging, how to fix its
price and how to sell it. In case of a manufacturing organization, the production department will develop and produce products on the advice of the marketing department because it is the marketing department which knows better the requirements of the customers. In case of purely trading organization, the purchasing department will procure those products as are suggested by the marketing department. The work of product planning and development will be performed by the marketing department itself.

The rapid development of the Indian dairy industry especially after the 1991 economic liberalization measures, forced the marketers to conduct more research studies on marketing. But in reality, from the research point of view, product planning and development in dairy products is an area, which is quite new and relatively unexplored and untouched.

Though the dairy industry has developed adequately and appreciably in India and many brands of different diary products have received little attention on part of the researcher. There is hardly any specific study in recent years in Jaipur district on the product planning & development in relation to dairy products. So a humble attempt is made in the present study in this direction.

Validity of the Study

Any study based on a consumer survey through a pre-designed questionnaire suffers from the basic limitation of the possibility of difference between what is recorded and what is the truth, no matter
how carefully the questionnaire has been prepared and designed and field study has been conducted. This is because the consumers may not deliberately report their true preference and, even if they want to do so, there are bound to be differences owing to well-known problems of filters in communication process. Care has been taken to minimize this error by conducting interviews personally and spending a lot of time on establishing report with the respondents.

This study confines only to the Jaipur district. Therefore, though there is a possibility of applicability of the conclusion of the study for other areas, no such regional applicability beyond the consumers of Jaipur district is assured.

**Scope of the Study**

There is a wide scope of this study. This study will help in identifying the specific problems of marketing reference to the impact of product planning & development in dairy industry. A multidimensional approach is proposed to put into application to analyse the respective problems. The study aims at making an effort to evolve a suggestive model with all the facts and marketing strategies.

**Limitations of the Study**

A sample survey was made making the Jaipur district as the empirical base by the limitations of time and resources accounted for the geographical concentrations only to the district of Jaipur.
The following are the limitations:

1. The study has not covered the entire population of consumers and agents due to limited resources and limited time at the disposal.
2. Correctness and accuracy in respect of data pertaining to the study on consumers and agents.

However, an effort was made to extract exact information and prepare a reliable analysis.

**RESEARCH PROCESS**

The present research study is a descriptive cum analytical type of study. The major purpose of this research is to find description of the state of affairs as it exists at present in the context of dairy products marketing the facts and information already available with the dairy co-operative institutions have also been used.

Before embarking on the details of research methodology and techniques, it seems appropriate to present a brief overview of the research process of the present study.

The procedural guidelines regarding the research process of the present study are as follows:

**Formulation of the Research Problem**:

The present research problem was formulated in the context of the impact of product planning & development in Dairy Industry. A case study of Jaipur Dairy. The problem could be developed with the discussion held with the experts of the subject, colleagues and officials.
associated with the dairy industry. It was acquainted with the problem through the review of conceptual and empirical literature available on the subject.

**Review of Literature:**

In India many studies and literature were available related to marketing management, marketing strategy, production & operation management, but there were limited studies and literature related with product planning & development as a background to this study. So an attempt was made here to present a brief review of selected studies which have directed relevance to the present work.

Product planning & development includes a number of decisions, namely, what to manufacture or buy, how to have its packaging, how to fix its price and how to sell it. New products development consists of the creation of new ideas, their evaluation in terms of sales potentials and profitability. Production facilities, resources available designing and production testing and marketing of the product. Whatever may be the nature of the operation of a company, product planning and development are necessary for its survival and growth in the long run. Every product has a life cycle and it becomes obsolete after the completion of its life-cycle. Therefore, it is essential to develop new products and alter or improve the existing ones to meet the requirements of customers.

Keegan; Warren J. (1969)\(^1\). This study has analysed for formulating an explicit product strategy for international expansion as
of the major untapped opportunities facing headquarters executives of multinational companies. This article has identified strategic alternatives and showed how to select the most effective strategy given any particular product-company-market mix.

Clark, R. N.; Stankey, G. H. (1979). This report is analysed on the end product of recreation management which has diverse ranges of opportunities from which people can derive various experiences. This report offered a framework for managing recreation opportunities based on six physical, biological, social and managerial factors that, when combined, can be utilized by receptionists to obtain diverse experiences.

Lawton, Leigh; Parasuraman, A (1980). This study of marketing literature revealed that little, if any, empirical research had been made to examine the impact of the adoption of the marketing concept on new product planning. The purpose of this study was to describe a research study made to fill this void.

Adriano De Maio; Roberto Verganti ; Mariano Corso (1994). This study conducted on new product development projects had features of complexity and inter-functionality that made a Project Management approach particularly suitable. Nevertheless, several failures have occurred as traditional Project Management techniques have been applied to New Product Development. Product Innovation Processes, in fact, have peculiarities that need adaptation and modification of traditional techniques. This paper focused on what seems to be one of the main causes of failure: the need to manage
project interdependencies assuring their mutual compatibility at portfolio level.

Fulton Joan & Bhargava Mukesh (1994)⁵: This paper examined the results of a large scale marketing intervention in the Dairy sector in India over the past twenty years. A brief overview of the role of marketing in economic development was presented. It was noted that most agricultural development projects had taken a production as opposed to a marketing approach. The paper illustrates how, as a marketing intervention, the establishment of cooperatives in the Dairy sector in India has resulted in the achievement of two important development objectives: growth and equitable distribution of the benefits. The paper concluded by suggesting the reasons or factors contributing to the success of the marketing intervention along with potential areas for further research.

Roger J. Calantone; Jeffrey B. Schmidt; Michael X. Song (1996)⁶. This study explored the new product literature which suggests that managerially controllable factors most strongly affect new product success, a few studies have examined how these factors differ across countries. The objectives of this article were to: (1) develop a model of managerially controllable factors associated with new product success; (2) directly compare the factors that managers perceive to be associated with new product success in the United States and China; and (3) demonstrate the application of various statistical analyses for increasing the confidence that may be placed in empirical findings and
outline methods for assessing whether significant estimation biases exist in cross-sectional data.

Robert G. Cooper; Scott J. Edgett; Elko J. Kleinschmidt (1999). This study explored that effective portfolio management is vital to successful product innovation. Portfolio management is about making strategic choices—which markets, products, and technologies our business will invest in. It was about resource allocation—how we will spend our scarce engineering, R&D, and marketing resources. It focuses on project selection—on which new products or development projects we choose from many opportunities we face. And it deals with balance—having the right balance between numbers of projects we do and the resources or capabilities we have available.

Balci tulay A., Wilbey Andrew R. (1999). This study explored the centenary of the first publication on the effects of high hydrostatic pressure on milk. After the initial activity, interest was reviewed with improvements to the high pressure processing equipment. High pressure processing has been demonstrated to be an effective method of modifying protein structure in milk and milk products and to have a bactericidal effect. Vegetative bacteria vary in their bar susceptibility and elimination of pathogens cannot be guaranteed.

David G. Hoopes; David G. Hoopes (1999). This study conducted on much recent thought in strategy and has stressed the importance of organizational integration for competitive advantage. Empirical studies of product development have supported this emphasis by correlating integrating practices and superior
performance. These researchers propose, from a resource-based or capability view, that this correlation results from integration leading to patterns of shared knowledge among firm members, with the shared knowledge constituting a resource underlying product development capability.

Eugene Sivadas, F. Robert Dwyer (2000). This study conducted on new products which provides increased sales, profits, and competitive strength for most organizations. However, nearly 50% of the new products that were introduced each year failed. Organizations thus find themselves in a double bind. On the one hand they must innovate consistently to remain competitive, but on the other hand, innovation is risky and expensive. Many organizations were forming business alliances to quicken the pace and reduce risks associated with innovation. Yet by some estimates, 70% of these alliances fail. Many of the prescriptions for successful alliance management clash with recommendations for effective innovation management.

David H. Henard, David M. Szymanski (2001). This article focused on product innovation which was increasingly valued as a key component of the sustainable success of a business’s operations. As a result, there has been a noticeable increase in the number of studies directed at explicating the drivers of new product success. To help managers and researchers synthesize this growing body of evidence, the authors conducted a meta-analysis of the new product performance literature. Of the 24 predictors of new product performance investigated, product advantage, market potential, meeting customer
needs, predevelopment task proficiencies, and dedicated resources, on average, have the most significant impact on new product performance.

Dangayach, G.S.; Deshmukh, S.G. (2001)\textsuperscript{12}, In this study an attempt was made to review the status of literature in manufacturing strategy. A literature classification scheme was suggested. A total of 260 articles from 31 referred to journals and international conferences were classified into content (manufacturing capabilities, strategic choices, best practices, trans-national comparison, literature survey, and performance measurement) and process-related issues. They had categorized the methodology used in the literature into conceptual, descriptive, empirical, exploratory cross-sectional and exploratory longitudinal approaches. Based on this, some possible research issues were also identified, viz., resource-based operations strategy, sector specific manufacturing strategy, relevance of manufacturing strategy to small and medium enterprises, manufacturing strategy in the context of green manufacturing, effect of organizational culture on formulation of manufacturing strategy, and performance measurement.

John P.J.; Bakore Neela Bhatnagar Pradeep (2001)\textsuperscript{13}. This investigation on widespread application of pesticides in agriculture, public health, and industry and in and around the home can result in the accumulation of pesticides in the environment. Therefore, a survey was conducted during 1993–1996 to investigate the magnitude of contamination of bovine milk with Organ Chlorine Pesticide (OCP) residues from Jaipur City, Rajasthan, India.
G.F.W. Haenlein (2001)\textsuperscript{14}. This study was conducted on small ruminant dairy research in relation to the dimensions of the dairy goat and dairy sheep industries in the United States and the world. At least 10 countries depend on goats and sheep for between 30\% and 76\% of total milk supply. Leading among developed countries is Greece producing 178 kg milk per person per year with 61\% from sheep and goats. Most developing countries need research, extension service, and public support to improve apparent productivity of goats and sheep.

Belgin Dogan; Kathryn J. Boor(2002)\textsuperscript{15}. This investigation on the degradation of milk components through various enzymatic activities associated with the contamination of dairy products by \textit{Pseudomonas} spp. can reduce the safe life of processed milk.

Deshingkar Priya; Kulkarni Usha; Rao Laxman; Rao Sreenivas (2003)\textsuperscript{16}. These researchers described in their study transformations in the global food system which were causing changes in food production and marketing in India at a slower rate than elsewhere in the developing world but there was a growing domestic market for horticultural produce, in both traditional and exotic vegetables. Production and marketing arrangements were responding to changing demand driven by urbanisation and diet change. Government-sponsored schemes in horticulture shown mixed results, generating more jobs than cereal production but reaching larger rather than smaller farmers and landless households. Beyond direct government interventions, new forms of contractual and sharecropping relationships were emerging between private dealers and farmers.
Ertugrul Karsak; Sevin Sozer ; S.Emre Alptekin (2003)\textsuperscript{17}. This investigation laid due emphasis on Quality Function Deployment (QFD) which was a customer-oriented design tool with cross-functional team members reaching a consensus in developing a new or improved product to increase customer satisfaction. QFD started with the House of Quality (HOQ), which was a planning matrix translating the customer needs into measurable Product Technical Requirements (PTRs). A robust evaluation method should consider the interrelationships among customer needs and PTRs while determining the importance levels of PTRs in the HOQ. This study employed the analytic network process (ANP) to fulfil this requirement. Furthermore, the proposed analytic procedure should take into account the multi-objective nature of the problem, and thus, incorporate other goals such as cost, extendibility and manufacturability of PTRs.

Calantone Roger; Garcia Rosanna; Droge Cornelia (2003)\textsuperscript{18} : They studied on managers need guidance on how to cope with turbulent environments in order to improve corporate performance. Research on environmental turbulence suggested that firms adopted a less centralized, more organic structure in dynamic, uncertain environments. Little work had been done specifically, however, on how environmental turbulence affects strategy planning for New Product Development (NPD).

Marsden T. and Smith E.,(2005)\textsuperscript{19} in their study explored the importance of specialised networks in shaping local/regional responses to the deepening crisis of conventional agriculture in the EU, as well as
potentially creating a more sustainable platform for rural development. They emphasized on the problem-solving aspects of network creation and maintenance within a broader and not necessarily supportive competitive and regulatory environment.

Dubeuf Jean-Paul, Research small Ruminant(2005)\textsuperscript{20}. This study reviews the characteristics of goat dairy systems and conditions for their development and presents indicators for developing goat dairy systems. Comparative examples from several cases were considered and the consequences relating to their productivity, specialisation and feeding systems elucidated. Goat dairy products can be produced as high quality, low cost products, but there needs to be a ready local, national or international market. Goat dairy systems have an important potential social impact and they can optimally utilize marginal areas.

Sudarsan, R; Fenves, S.J.; Sriram, R.D.; Wang F.(2005)\textsuperscript{21} : The Product Lifecycle Management (PLM) concept holds the promise of seamlessly integrating all the information produced throughout all phases of a product's life cycle to everyone in an organization at every managerial and technical level, along with key suppliers and customers. PLM systems were tools that implement the PLM concept. As such, they need the capability to serve up the information referred to above, and they need to ensure the cohesion and traceability of product data.

Sepulveda, D.R.; Gongora-Nieto, M.M.; Guerrero, J.A. (2005)\textsuperscript{22}. This study conducted on thermally pasteurized milk bulk-shipped to distant places is usually pasteurized for a second time after arrival at
the point of consumption. Such double thermal treatment has the potential to reduce the sensory and nutritional quality of milk; hence, the use of a no thermal preservation method was investigated. High-temperature Short-Time (HTST) pasteurized milk was treated with five Pulsed Electric Fields (PEF) having peak electric field of 35 kV/cm and 2.3 μs of pulse width, at a temperature of 65 °C for less than 10 s. PEF treatments were applied either immediately after thermal pasteurization to produce an extended-shelf life product, or eight days after thermal pasteurization to simulate processing after bulk-shipping. Application of PEF immediately after HTST pasteurization extended the milk’s shelf life to 60 d, while PEF-processing after eight days caused a shelf life extension of 78 d, both proving to be successful strategies to extend the shelf life of milk.

Copley, M. S.; Berstan, R.; Dudd, S. N.; Aillaud, S.; Mukherjee, A. J.; Straker, V.; Payne, S.; Evershed, R. P. (2005). This investigation on extracting residues from pottery shreds, the authors show that it is possible to say whether they had contained dairy or carcass fat residues. Correlation with faunal assemblages showed a good match between the incidence of dairy fat in pottery which implied a strong dairy fraction in the diet and a milking herd implied by the animal bones. They also show that dairy fat was more likely to be found in the smaller pots while carcass fats occurred in the larger ones. The method has demonstrated dairying in England from the fifth millennium BC, and offered a novel way of studying economies with pottery but few animal bones.
Leblanc S. J., Lissemore K.D, Kelton, D.E. Duffied, T.F., Leslie K.E.(2006) This Study was focused on the major points of progress and challenges in health management of dairy cattle in the last 25 years. A selection of the leading contributors in the field is acknowledged. Specific advances in the areas of transition cow management, epidemiology, udder health, applied immunology, housing design, calf health, and health-monitoring tools were described.

Regattieri A., Gamberi M. and Manzini R. R. Manzini (2007) The authors analysed legal and regulatory aspects of food traceability, and provided a general framework for the identification of fundamental mainstays and functionalities in an effective traceability system. The paper presented the traceability system used by Parmigiano Reggiano (the famous Italian cheese) which was developed using the proposed general framework. Based on an integration of alphanumerical codes and RFID technology, the system worked well with very good results for both cheese producers and consumers.

Meena, M. L.; Sharma, N. K. (2012) The present study was conducted in Jaipur district of Rajasthan. A sample of 240 respondents, consisting of 120 members of dairy co-operative societies and 120 non-members of dairy co-operative societies were drawn.

Thus, it can be seen that limited studies have been made in marketing and product planning & development in Dairy Industry. Hence, in the present study, an effort has been made to make a
comprehensive study of the dairy industry keeping in view the relevance of the above review of literature.

The review of the above mentioned literature helped the researcher in problem identification and in understanding the problem properly.

RESEARCH DESIGN:

After formulation of the research problem and development of hypothesis, an attempt was made to evolve a research design which was suited to the requirements of the present study which are to explore, describe and diagnose the problems under study.

Research is a systematised effort to gain knowledge. According to Man Lein, "Research is the careful, diligent and exhaustive investigation of a specific subject matter". Method is the way of doing something. It is the procedure by which researchers go about their work of describing, explaining and predicting phenomenon. Methodology provides standards.

The formidable problem that follows the task of defining the research problem is the preparation of the design of the research project, popularly known as the research design. In fact, the research design is the conceptual structure within which research is conducted. It constitutes the blueprint for the collection, measurement and analysis of data. A research design explains:-

1. What is the study about?
2. Why is the study being made?
3. Where will the study be carried out?
4. What type of data are required?
5. Where will the data be found?
6. What will be the period of the study?
7. What will be the sample design?
8. What techniques of data collection will be used?
9. How will the data be analysed?
10. In what style would it be reported?
11. Why is the Research design needed?

Research design stands for advance planning of the methods to be adopted for collecting the relevant data and the techniques to be used in their analysis keeping in view the objectives of the research and the availability of staff time and money. Research design is needed because it facilitates the smooth sailing of the various research operations thereby making research as efficient as possible yielding maximal information with minimal expenditure of effort time and money.

An efficient and appropriate design must be prepared before starting research operations. The design helps the researcher to organize his ideas in a form whereby it will be possible for her/him to look for flaws and inadequacies. Without the delineation of research
boundaries and/or objectives, a researcher's activities in a single project could be virtually.

**Objectives of the Research Design**

*Selltiz* says that research design is closely linked to an investigator's objectives. Accordingly, they specify that research designs are exploratory, descriptive and/or experimental in nature. Consistent with these types of research designs, they delineate four major purposes of social research (1) to gain familiarity with a phenomenon or to gain insights (2) to describe things (3) to determine associations between variables and/or (4) to test hypotheses for projects, if any, which are conducted for purposes other than those stated above.

It has been noted that a common function of research design is to assist the investigator in providing answers to various kinds of social questions. Research designs are guidelines for investigative activity and not necessarily hard and fast rules that must remain unbroken.6

**Features of a Good Design**

The design which minimises bias and maximises the reliability of the data collected and analyzed, is considered to be a good design. A research design appropriate for a particular research problem, usually involves the consideration of the following factors:

(A) Obtaining maximum information.

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(B) The availability and skills of the researcher and his staff if any.
(C) The objective of the problem to be studied.
(D) The nature of the problem to be studied.
(E) The availability of time and money for the research work.

3. Research Tools:

To collect information, a questionnaire was designed which was structured on disguised type and was administrative as per schedule. It included mainly close-ended questions and a few open ended questions.

SAMPLE SELECTION

A tactful sample design leads to fruitful completion of the research. Research needs sufficient and accurate data. In order to procure these data, a researcher conducts investigation into a given universe. Statistical data can be collected either by census enquiry or by sample enquiry. In a census enquiry all the units of a universe are studied whereas in a sample enquiry only selected number of units are observed and conclusions are drawn about the universe from their study. A sample enquiry needs comparatively less time and money.

A proper procedure is adopted for evaluating sample plan in order to select representative units so that the influence of change and probability can be estimated. The selected respondents constitute a
sample and the selection process is called "sampling technique" or 'sampling design'.

Instead of studying each and every unit in sampling method, a small portion is selected which represents the whole population. The idea of sampling is quite old. Very often a handful of grains of boiling rice is examined to ascertain whether it is cooked or not.

The main object of sample selection is to draw conclusions about the whole by examining a part of it. The following are the major aims of sampling :-

1. Sampling is done to get the desired information about the universe with a prescribed reliability at the minimum cost or with the maximum reliability at a given cost.

2. The data collected through the sampling technique, are more precise and reliable.

3. The best possible values of the parameters can be attained through sampling, if the sample studies are made in such a way that they disclose a mathematical relationship between the values of distribution.

A researcher can easily examine a part of the whole instead of examining the whole. Sample selection is useful because a researcher has limited efficiency and he/she can use it in a better way through sample selection. If he/she draws a conclusion about the whole by

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7 C. R. Kothari "Research Methodology" (New Delhi : Vishwa Prakashan, 2008) P. 125
examining the whole, it will be difficult to do the work effectively. There are various advantages of sampling.

1. Saving of time - Comparatively single number of units are studied in sampling methods and naturally it requires, less time.

2. Saving of money - In sampling method, a smaller number of units are studied, so, it requires less money and fewer resources.

3. Accuracy of result - If the sample has been properly selected the results are within a very close range of accuracy.

4. Impossibility of the use of other method - Universe is too vast and geographically scattered so that every unit may not be contacted the only method can be used then is the sample method.

The success of sampling method depends upon many factors. Sample should be selected carefully because there are chances of bias in sample selection. Sometimes universe is too small or too heterogeneous that makes it impossible to draw the representative sample. Sampling usually enables to estimate the standing error and sticking to the sample. If the source list is incomplete, old or contains duplicate or triplicate names, the selection of the sample frame is bound to be biased. At times the respondents are afraid to leak the information. So drawing sample is a tactful strategy. A researcher has to keep in mind many ifs and buts:

1. The researcher must first of all, have a clear idea of the universe from which the sample is to be drawn.
2. He/She has to decide the unit of sample say an individual, a family or a group.

3. The source list of the sample to be drawn must be selected.

4. In case of sampling the size of the sample is an important problem to be decided. The sample should be small enough to avoid intolerable sampling error.

These are some of the broad considerations that are to be kept in mind when a researcher selects and draws the sample.

There are different types of sample designs based on two factors viz. the representation basis and the element selection methods. On the basis of representation, the sample may be either probability sampling or non-probability sampling.

The following are the methods of probability sampling:

1. Simple Random sampling
2. Cluster sampling
3. Stratified Random sampling.

Similarly, the following are the methods of non-probability sampling:

1. Systematic sampling
2. Incidental or Accidental sampling
3. Judgment sampling
4. Quota Sampling
5. Purposive sampling
6. Self selected sampling
7. Convenience or chunk sampling

Every sample design has one or the other characteristics. Generally speaking a good sample design has the following features:

a) Sample design must result in a truly representative sample.
b) Sample design must result in a small sampling.
c) Sample design must be viable in the context of funds available for the search study.
d) Sample design must be so designed that systematic bias can be controlled in a better way.
e) Sample designs be so framed that the results of the sample study can be applied, in general, for the universe with a reasonable level of confidence.

Taking all odds and woes into consideration, the researcher opted for a Convenience sampling method in which it was convenient to select samples for the study. This convenience was in respect of availability and accessibility of the units and the limitations of the time and money. The persons easily available to fill up the questionnaire were contacted and picked up from various areas of Jaipur for getting their responses on the topic of the study.
To Determine Sample Design:

The universe of the study is extended to the state of Rajasthan. However, the consumers who were interrogated were from Jaipur district. It is difficult to cover each and every consumer because of time and money constraints, a sample of the whole population was drawn. The chosen sampling plan is given below.

The sampling unit for survey was a consumers & Saras Dairy booths.

- **Sample Size**: For the purpose of equal representation samples from all the 20 areas were selected. The number of respondents from each area were selected according to the size of the area. The total 200 consumers and 50 agents were contacted.

- **Sampling Procedure**: Sampling procedure used was Random Sampling, keeping in mind proper representation of all the areas.

- **Contact Method**: Personal contact with all the respondents was mode. Apart from consumers, the retailers of Dairy Booths, the managers of various department milk producers and the officials of supervisory level and top management were also interrogated for the study.

**HYPOTHESIS FORMULATION**

Hypothesis may be defined as a proposition or a set of propositions to get forth as an explanation for the occurrence of some specified group of phenomena either asserted merely as a provisional conjecture to guide some investigation or accepted as highly probable.
in the light of established facts. For a researcher hypothesis is a formal question that she intends to resolve.

Before the formation of a hypothesis, the following points are to considered.

1. Hypothesis should be clear and precise, so that conclusion may be more reliable.

2. Hypothesis should be capable of being tested.

3. Hypothesis should state relationship between variables.

4. Hypothesis must be specific and limited and scope

5. Hypothesis, as far as possible, should be stated in most simple terms so that the same may be easily understood by all concerned.

6. Hypothesis should be so defined that the judges accept it as being the most likely potential for research.

7. Hypothesis should be amenable to testing within a reasonable time

8. Hypothesis must explain the facts that give rise to the need for explanation.

Keeping these points into his/her mind a researcher should start with trying to determine all the alternative means (solutions or explanations) of coming to grips with his problem. This means that the
researcher needs to undertake a "resource survey" which may bring to
Research Methodology is an important ingredient of conducting a research work. Research means to search or to find out and examine the topic. light what alternative, solutions or explanations can be applied to the problem. 8

A hypothesis is a tentative generalization about the subject of inquiry, the validity of which is to be tested by undertaking research. The hypothesis is based on existing knowledge of the subject.

The hypothesis is taken to find out the fact or to give correct explanation for the result on the basis of the investigation.

Some important functions of hypothesis are to 9:-
1. prepare a basis or a starting point for research;
2. limit the scope of inquiry (Thus instead of random collection of data, only relevant information shall be collected);
3. determine the method of investigation; and
4. verify the conclusion based on existing knowledge of the subject.

The research hypotheses are formulated after the problem has been identified and other issues connected with the methodology of research have been finalized. It may be a single hypothesis or some hypotheses as per the requirement of the subject of research. Important conditions for valid hypothesis are :-

8 K.R. Sharma, "Research Methodology" (Jaipur : National Publishing House, 2002) P. 33

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1. The hypothesis should be empirically verifiable. The hypothesis has to be ultimately confirmed or refuted; otherwise it will remain a mere supposition.

2. The hypothesis must provide due for seeking solution of the problem of which the inquiry has been initiated.

3. The hypothesis should have a strong logical basis for prediction or to explain the consequences following the event.

4. The hypothesis should be simple. i.e. it should have minimum assumptions.

5. The statement of the hypothesis should be clear, definite and certain.

6. The hypothesis should be based on facts considered reasonably, true as per the present state of knowledge in the field.

For a purposeful study, hypothesis provides an important role. The researcher, after going through identification of the research problem process finds the main hypothesis.

The hypotheses have been developed on the basis of discussion with colleagues and experts about the subject objectives of the study, examination of available data records, reports and other information connected with the problem.

Review of similar studies in the area and exploring personal investigation with persons associated with dairy industry. The hypotheses so developed are given as under:
1. "The success of marketing strategies of Jaipur Dairy is based on product planning & development."

It has taken time in popularizing the dairy products and their marketing due to illiteracy, ignorance and unawareness, amongst the masses.

A purposive strategy is required to be evolved ensuring perfect co-ordinations among various agencies and sections with the marketing department. There is enough scope for improvement in the present organizational set-up of the dairy to enhance the sales volume of various products.

**DATA COLLECTION**

**Introduction :-**

Data collection is simply how information is gathered. There are various methods of data collection such as personal interviewing, observation, questionnaire (telephone, mail) etc. Depending on the survey design, these methods can be used separately or combined.¹⁰

Individuals and organizations collect data because the information is needed. They may want information to keep records for administrative purposes, make decisions about important issues, or they may be required to pass information on others. Whatever the specific reason, data have to be collected to provide information.

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TYPES OF DATA

Data can be classified as:

- Primary and secondary data
- Internal and external data
- Discrete and continuous data (the data which can be measured to the desired accuracy) height, weight, time and length.

Primary Data (Source):

Primary data are the one which are collected by an investigator himself for the purpose of some specific, enquiry or study. Such data are original in character and are generated by the survey, conducted by individuals or research institutions. For example, if a researcher is interested to know what the literacy rate in a particular village is, he or she must undertake a survey and collect the data related to the (literacy literate people in that village. Such collected data would be considered as primary data.

Secondary Data (Source):

When an investigator uses the data which has already been collected by other persons, such data are called secondary data. This data is the primary data for someone else who uses this data for his own purpose. The secondary data can be obtained from journals, reports, government publications, publications of professional and research organization and so on. For example, If a researcher desires to analyses the weather conditions of different regions, he or she can get
the required information or data from meteorology department. Even though secondary data are less expensive to collect in terms of money, the quality of this data may even be the better under certain situations, because it may have been collected by persons who were specially trained for that purpose (called training investigators).

It is necessary to critically investigate the validity of secondary source as well as the credibility of the primary data collection agency.

**Key Primary Data Collection techniques :**

(1) Survey
(2) Questionnaires
(3) Interviews
(4) Observations
(5) Panel Questionnaire Designs

In primary data collection, one collects the data oneself using methods such as interviews and questionnaires. The key point here is that the data collected should be unique to the research, and until it is published, no one else has access to it.

There are many methods of collecting primary data and the main methods include :-

(i) Questionnaires
(ii) Interviews
(iii) Focus Group Interviews
(iv) Observation
The primary data, which are generated by the above methods, may be qualitative in nature (usually in the form of words) or quantitative (usually in the form of numbers or where one can make counts of words used.)

**Questionnaires**

Questionnaires are a popular means of collecting data, but are difficult to design and often require many rewrites before an acceptable questionnaire is produced.

Questionnaires play a central role in the data collection process. A well designed questionnaire efficiently collects the required data with a minimum number of errors. It facilitates the coding and capture of data and it leads to an overall reduction in the cost and time associated with data collection and processing. The biggest challenge in developing a questionnaire is to translate the objectives of the data collection process into a well conceptualized and methodologically sound study.

**Collection of Data :**

The data used in the present study have been primarily collected from unpublished financial and cost statements obtained from the office of the Jaipur Dairy during the years from 2009 to 2014. Data have also been collected from various publications of the Dairy Federation Milk Unions, Websites of RFCD & Jaipur Dairy.
However, the Federation was reluctant to provide information about sales & cost of product per unit and they did not publish even a single year annual report.

Therefore, all the information has been collected from the interviews held with the officials, employees and workers of the federation & dairy plant.

For the study, two types of data were collected, primary and secondary. The primary data were collected through the questionnaire method. A questionnaire was framed in comprehensive manner containing various questions relating to the problem. The structured questionnaire has been appended with the thesis.

The secondary data were collected with the help of various study reports, journals, books, proceedings and other published materials of the institutions, related to be dairy sector.

**Analysis of Data**

The data collected have been codified and tabulated in the respective chapter. The analysis of data helped in understanding the marketing strategies & products planning & development in dairy industry.

Besides this, various problems, which came in the way of marketing & product development, have been identified. The analysis of data has been presented in the respective chapters of the thesis.
The data have been interpreted to arrive at some concrete conclusions. The problems identified with regard to the impact of product planning and development in dairy industry and suggestions to overcome the problems, have also been evolved on the basis of the interpretation of data.
REFERENCES


