CHAPTER THREE

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3.1 RESEARCH METHODOLOGY BRIEF

3.1.1 OVERVIEW OF RESEARCH METHODOLOGY
Methodology is a body of methods rules and postulates employed by a discipline; or a particular procedure or set of procedures, and also analysis of the principles or procedures of enquiry. It is also the collection, comparative study and the critique of individual methods in that field of enquiry. Methodology refers to rational and philosophical assumptions that underlie a study. Methodology can also be used to encapsulate various processes, activities and tasks like software development methodologies along with many others. Methodologies can be found in association with in particular framework – PMI, ITIL etc. Most science is supported by both qualitative methods.

3.1.2 RESEARCH
Research has to be well defined and it can be of various types - basic research, applied research, action research, developmental research, evaluation research etc. Research is helpful in different aspects of life which includes buying a car, browsing of information, etc. These things do not fit the term of research in its true sense, as we often mix research with accumulation of facts. In order to do research i.e., research in the strictest sense of the term; we need to follow the characteristics of research. One can get an idea about the characteristics of research through its definition.

Research can be defined as diligent search, enquiry, scientific investigation and study to discover facts.

This gives us a hint about its characteristics:

- There was a question in the researcher’s mind to begin his journey to research.
- The Researcher has started with a plan i.e. every step planned well in advance. The researcher tried to be clear about how to develop different steps and how to proceed with the steps in a well planned and systematic manner.

- Researcher tried to clearly state the problem in a precise and grammatically
complete way. He tried to mention what he seeks to discover and also made it clear for others to understand what he is attempting to research.

- In order to undertake a good research, the research problem was broken up into different parts. This helped to resolve the main problem.
- Hypothesis is the most important and inevitable part of research and without proposing an appropriate hypothesis, research work is not done. Researcher started his research work with hypothesis.
- Lastly, researcher tried to research which included collection and organization of data.

3.1.3 RESEARCH METHODOLOGY
The scientific method used for research is known as research methodology and it includes the formation of hypothesis, testing the hypothesis, to see whether the hypothesis is accepted or rejected. Methodological research is used to create an authentic certificate and replicable study, along with an aim to describe a phenomenon, to predict it, to control and to explain in the form of a theory. There are two types of research methodology – quantitative and qualitative research.

- Qualitative research: It includes all in-depth understanding of human behavior and the reasons explaining human behavior. It focuses on reasons behind why and how questions are posed and it requires collection of smaller and focused samples.
- Quantitative Research: It uses scientific, concrete and projectable numerical data that can be statistically analyzed. Here the data is gathered or drawn from large samples.

3.1.4 THE STEPS OF RESEARCH
Following are the general steps of research followed:

3.1.4.1 FORMATION OF IDEAS
Researcher tried to look at a research question developed from an idea, in a quest to identify relationship between variables which can explain a fact.

3.1.4.2 DEVELOP A RESEARCH QUESTION
A problematic question can be a good research question. One has to know the problem and also know what a problem is and especially what a scientific problem is. There are few steps for formulating a research problem-identify a broad problem of your interest and build little knowledge in that area.
Review of literature
Relating the research problem to a theory in the field, this provides the direction of the research.

3.1.4.3 CREATE A HYPOTHESIS
A hypothesis is a formal statement that presents the expected relationship between an independent and dependent variable. A dependent variable is a variable that contains variations for which we seek an explanation; an independent variable is a variable that is thought to affect or cause variations in the dependent variable. A researcher while testing hypothesis must be clear as to what he or she is observing. The properties that the researchers study is termed variable, which is a symbol to which numerals of values are assigned. There are various types of variables such as independent and dependent variables, continuous and categorical variables. A continuous variable is capable of taking on an ordered set of values within a certain range, while a categorical variable may be made up of two or more subsets or categories.

3.1.4.4 MAKE A RESEARCH DESIGN
The researcher tried to come out with the conceptual structure within which research would be conducted. This is formulating a proper research design, which provide for the collection of relevant evidence with minimal expenditure of effort, time and money. This however, can be achieved by developing a research purpose. Research purpose may be grouped into four categories, viz. explanation, description, diagnosis and experimentation. According to the purpose of the research a suitable research design is selected. Design can be classified as – experimental designs, field research, unconstructive research, single subject designs, evaluation research, secondary research and survey research.

- **Design of Exploratory Studies**: Purpose of such studies is to achieve new insights into a phenomenon, in order; to formulate a more precise problem exploratory research will be effective if survey of literature, experience survey and analysis of ‘insight stimulating’ cases are carried out before the initiation.
- **Description studies**: It aims at portraying accurately the characteristics of a particular group or situation. A descriptive study may be concerned with the attitudes or views towards anything, like rights to strike, prohibition, college autonomy etc. Descriptive study involves, formulating the objectives of the study, defining the
population of the study, defining the population and selecting a sample, designing the methods of data collection and analysis of the data.

- **Experimental Studies**: The purpose of experimental studies is to test a hypothesis of causal relationship between variables. A central group and an experimental group are required for this study. There are three primary characteristics of experimental research:
  - Control of independent variable
  - Manipulation of independent variable
  - Observation of dependent variable

### 3.1.4.5 COLLECTING DATA

Appropriate data was collected. There are several ways of doing it. Primary data can be collected either through experiment or through survey. It can be done through the following methods:

- Observation is one of the methods that is an excellent source of current happening; it is less expensive and provides limited information.
- Through surveys, the investigator can seek answers to a set of preconceived questions through personal interview. It is widely used, especially for obtaining information about a population from the representative sample.

**The various types of survey include:**

i) Cross-sectional survey
ii) Longitudinal survey including-
    a) Trend studies
    b) Cohort studies and
    c) Panel studies.

**Methods of data collection in survey:**

Questionnaire – No face to face interaction, is mostly mailed and thus an extensively used method. Questionnaire must be prepared carefully. Questions should be in regard to what people know, what they believe, expected to feel, what they have done and plan to do. Common types of information asked are factual information, opinion, beliefs, present, past and future behavior.

Through schedules, which contain relevant questions. Data is collected by filling up the schedules by enumerators on the basis of replies given by respondents.

### 3.1.4.6 ANALYSE AND INTERPRET RESULTS
Analysis and interpretation of results is one of the important steps in research. This process is linked with various operations like – establishment of categories, the application of these categories to raw data through coding, tabulation and then drawing statistical inferences. There exist different categories through which new data can be classified like coding, editing and tabulation. After this classification, analysis of work is based on the computation of various percentages, coefficients etc., by using statistical methods and formulae. In the process of analysis, relationships or differences supporting or conflicting with original or new hypothesis should be subjected to tests of significance to determine with what validity of data can be said to indicate a conclusion.

3.1.4.7 GENERALISATION AND INTERPRETATION
The researcher should arrive at a certain generalization in his research work. He may seek to explain his findings on the basis or some theory, which is called interpretation. Interpretation helps in bring out new questions for further research.

3.1.4.8 COMMUNICATE RESULTS
Communicating results is of prime importance of a research and it can be presented in different forms like – graphs, statistical figures, also plain text with conclusion and recommendations.

3.1.4.9 DEFINING A RESEARCH PROBLEM
Defining a research problem is a must. There are various questions regarding type of research and it is important to choose the right approach.

➢ A good problem statement is required and can be used to good advantage. The problem should express a relation between two or more variables. The problem should be stated clearly and unambiguously in question form and the problem and the problem statement should be such as to imply possibilities of empirical testing.

➢ A good Research Question: Before research is conducted, the research question should be stated in writing to identify the research objective and key abstract concepts involved in the research.

➢ A good research question should slate an expected relationship between two or more variables, should be testable, should have definite reasons for considering the research question, and should be as brief as possible and clearly stated.

3.1.4.10 CRITERIA FOR GOOD RESEARCH
A good research should fulfill the following criteria in order to be successful.

a) Along with defining the purpose of research clearly, common concept
was used by researcher.

b) It is important to describe the research procedure so that another researcher can repeat the research if required which researcher tried to implement.

c) The research procedure was carefully designed and planned so that it can provide objective results.

d) The method of analysis was done properly in order to provide significance and validity, reliability of data should be checked.

e) Researcher tried to have conclusions with a good reputation, experience and tried to have integrity. These qualities help to faster confidence research work.

Thus, we can say that a good research possesses the following qualities:-

1) Good research is systematic with proper steps and will defined set of rules.
2) Good research is logical as logical reasoning and logical process of indication and dedication are of great importance in research. Logical reasoning gives more meaning to the research in the context of decision making.
3) Good Research is empirical as it must be related to few aspects of real situations and should deal with data providing a basis for external validity to the results.
4) Good research is replicable thereby allowing result to be verified and building sound basis for decisions.

3.2 APPLIED METHODOLOGY

3.2.1 IDEA GENERATION

Maharashtra State hold the powerful milk sheds and the dairy industry in recent years has shown good potential for enhancing developments in the area of marketing like new products development, new markets for liquid milk. E.g. food service institutional market, defense market, ingredient market and parlors market etc. New techniques of packaging, improved distribution practices and advertisements, which helped to improve nutritional status of the consumer, but still there is much that can be done to raise the satisfactory level and efficiency through improved management practices and application of modern techniques. It also identified major issues and areas, needing for further developments.

Further, in the process of industrializing of the dairy sector, marketing has a significant role, as a planned development, is based on production-consumption
parameters, and whether, the marketing perspective has been maintained or not, is the main issue. And study will help in generating new ideas to improve upon the organizational and administrative practices currently being used in the state.

In conjunction with modernization and commercialization of the dairying, the rise of new institutional structures and approaches for marketing has generated new opportunities for value addition. In order to develop adequate appreciation of the role played by these institutional structure and approaches, it is which have had identical presence in the dairy marketing in recent decades. It is also customary to classify within each of these categories, operators falling in the non-organized sector, using traditional methods and techniques and those in the organized sector, using modern methods and techniques.

Further, it is useful to focus upon institutional arrangements in milk marketing where considerably enhanced activities are expected in the next few years with increasing competition amongst a plurality of institutions and new brands in this field. It is also important to get an overview of the broad aggregates of these sectors and understand the type and role played by private operators. E.g. several thousands of dudhias, gowalas and bhattiwalas, who compete with co-operatives, state- undertakings and organized private sector operators in the field of marketing of milk and milk products.

Keeping in mind, the above mentioned challenging tasks, need for undertaking a detailed study clearly exists to work-out new approaches. In greater details, the study would help to:

1. Understanding the market structure and nature of each linkage between producer manufacturer- wholesaler/ retailer- consumer and their impact on each-others routine practices.
2. Assessing marketing (product mix, quality, price, promotional practices and competition) and retailing scenario and emerging trends.
3. Assessment of the emerging trends.
4. Understanding milk grid system and identifying new opportunities for up gradation.
5. Identifying opportunities for market up gradation and growth.
6. Analyzing the existing milk and milk product-portfolio.

3.2.2 IMPORTANCE OF THE TOPIC
The dairy sector is an important food segment in India and has experienced an increased consumption since the economic stabilization after the year 1990. Moreover, together with retailing development and competition among companies; market attention both on manufacture and retail has increased and businesses have tended to develop new marketing strategies in order to obtain competitive advantage.

The aim of this research work is to provide strategic review of the marketing strategies adopted by dairy industry in the selected region. In the present study, the researcher has made an attempt to understand overall dairy marketing scenario and developments related to the marketing strategies adopted by the dairy marketing companies in Pune region, which is one of the very powerful milkshed as well as the dairy market of the state of Maharashtra.

In the present study, dairy market is analyzed taking into consideration manufacturers and/or packagers (consist of state-owned, co-operatives and private players) of milk and milk products as players. Food retailers, distributors and end-users are considered as the key buyers and dairy farmers as the key suppliers. Prime focus of the study is mainly on the marketing strategies adopted by manufacturers and/or packagers (consist of state-owned, co-operatives and private players) of milk and milk products.

The dairy market in the selected region is comparatively easy to enter as a small enterprise, however in order to supply to the masses, dairy marketing companies must be large and need to have some level of fine-tuning to secure the successful entry. Competition, however, is strong as there are several players present that are generally similar to one another despite most operating diverse dairy portfolios.

The dairy market in the selected region is highly price sensitive; as buyers/customers are tend to choose the cheaper option, especially in the milk market. Manufacturers and/or packagers can target end-users with their branding strategies, or develop more individual, premium products to counter balance the power of buyer to make purchasing decisions on price alone. Overall, buyer power is considered as the strongest factor.

Leading dairy product manufacturers and/or packagers in the selected region may have strong brands, aimed at retaining end-user loyalty, which means that new players have to face more difficulties in distinguishing their own brands. Overall, there is a strong likelihood of new players in the dairy market.
In the present study, for statistical analysis purpose, researcher has taken into consideration pricing, product, distribution, marketing communication, selling, marketing planning and marketing implementation variables along with market effectiveness variables (market share growth, acquiring new customers, sales revenue, sales growth rate, increasing sales to current customers and cost of retaining customers) and profitability using statistical tool called multiple regression.

This study provides a comprehensive assessment of the marketing effectiveness and profitability. The statistical analysis provides insight into the nature of relationship with performance measures (market share growth, acquiring new customers, sales revenue, sales growth rate, increasing sales to current customers and cost of retaining customers and profitability) and marketing mix.

The researcher has tried to ascertain the impact of marketing mix factors (pricing, product, distribution, marketing communication, selling, marketing planning and marketing implementation) on marketing effectiveness and profitability in this study. Overall, this study will help dairy marketing companies to improve performance, so that they can build sustainable competitive advantage in the future.

3.2.3 THE RESEARCH QUESTION

The emergence of the organized sector has been growing force in the modernization of the dairy industry. It has brought huge range of milk products into the urban homes, through improved quality processing and production, new techniques of selling, packaging, distribution channels and advertisements. This trend is getting an added momentum through growing urbanization and consumerism. The changing life-style is also fuelling the fast-food revolution.

Dairy marketing companies need to develop capabilities of making the marketing function a more market/consumer oriented, which will help them to bridge the gap between strategic change and market complexity/instability.

The purpose of marketing strategy is to facilitate a business achieve and sustain a competitive advantage in the marketplace.
3.2.4 FORMULATION OF OBJECTIVES

On the basis of the aspects explored under the research topic the following objectives were formulated:

4. To study the knowledge companies have about customer and competition in dairy industry.

5. To study marketing strategies adopted by companies and its impact on the market effectiveness and profitability using multiple regression.

6. To study the measures adopted by companies for gaining competitive advantage.

In broader terms, the study will try to understand the various perceptions about concept and application of marketing strategies of every player in dairy marketing to describe the structure and recent trends of strategy making of each of the link of this food agriculture chain, from production to consumption, with special reference to the intermediaries, in the sector. To focus on the schemes to improve the inter-relationship and the efficiency of the dairy sector as whole and to show how the state might take appropriate action to help to achieve these objectives.

The new approach, is no longer intended to the consumers or the milk producers, but it covers series of coordinated measures concerning all links intervening in the dairy industry, so the study will look into the role of each player, their structure and other informal sector players and come out with recommendations to make effective strategies for good marketing practices (GMP). The dairy processing industry, with which most farmers are concerned, and whose prospects of development in the various markets appear satisfactory, should achieve higher value added during manufacturing, particularly by the development of new or innovative products to offset the relative leveling off of demands.

On the whole, the objective of the proposed study is to come out with effective analysis of various marketing strategies (i.e. product, price, promotion and place) adopted by the Dairy Industry to strengthen the producer-consumer interest for growth and development of the region the state.
3.2.5 FORMULATION OF HYPOTHESIS
Based on the above defined objectives and subsequent discussions with experts in this field the following hypothesis were formulated:

Hypothesis 1
Know-how of customer and competition creates base for companies to take strategic decision related to the dairy market.

Hypothesis 2
There is an impact of marketing strategies adopted by the companies on the market effectiveness and profitability.

Hypothesis 3
Competitive advantage creates numerous strategic options to the company.

3.2.6 FORMULATE A RESEARCH DESIGN

3.2.6.1 TYPE OF RESEARCH DESIGN
Since the marketing strategies adopted by the dairy industry in Maharashtra ware to be understood and documented, an exploratory design was chosen to conduct the study.

3.2.6.2 SAMPLE SIZE
Sample size of the present study is 41. At the time of the selection of the companies, the researcher has considered manufacturers and/or packagers (consist of 1 state-owned, 6 co-operatives and 34 private dairy companies of the selected region) on the basis of minimum average daily milk procurement of 5000 liters or the annual turnover of 5 crores.

3.2.6.3 SAMPLING
The process of sampling was done by selective method and out of different organizations of different size, the required sample was selected.

3.2.7 DATA COLLECTION
Keeping in view the objectives of the study, the primary sources and the Secondary sources, will be utilized for the study.

3.2.7.1 PRIMARY DATA COLLECTION
The study is based on the primary as well as secondary data. Primary data for testing hypotheses was collected by using a standard Likert-type 7 point scaled questionnaire with anchors of ‘completely agree’ and ‘completely disagree’. Sample size of the present study is 41. At the time of the selection of the companies, the researcher has considered manufacturers and/or packagers (consist of 1 state-owned, 6 co-operatives and 34 private dairy companies of the selected region) on the basis of minimum average daily milk procurement of 5000 litres or the annual turnover of 5 crores. Each company top level management executive or manager was interviewed using structured questionnaire to elicit the information. Along with structured questionnaire, survey, discussions and observation techniques were also adopted by the researcher.

And for the purpose of collecting data two methods will be used:
1. The Survey.
2. Questionnaire and interview.

3.2.7.2 QUESTIONNAIRE DESIGN
The questionnaire was titled strategic orientation questionnaire. It was divided in three sections. First section focused on the customer and competition exists. Second section is devoted to the marketing strategies adopted by the companies and the last section is related to performance measures and a validate scale. Questionnaire has been revised twice on the basis of pre-testing.

The statements were presented in the form of a 7-point Likert-type scale. Respondents were asked to state their level of agreement or dis-agreement on scale where 7 meant completely agreement and 1 meant completely dis-agreement.

3.2.7.3 SECONDARY DATA COLLECTION
As far as secondary data is concerned, the available literature on the subject matter was studied, which include the guidelines of the state and central governments, documents prepared by N.D.D.B., I.D.A., AMUL, VAMNICOM, MCCI, I.R.M., recommendations of expert committees on the subject, surveys and studies conducted, selected books, journals, newspaper articles, and research articles available on various websites.

3.2.8 ANALYSIS AND INTERPRETATION
The analysis of the interview data was carried out using well-known statistical
techniques called multiple regression analysis and one sample t’ test using SPSS.

3.2.9 COMMUNICATION OF RESULTS
The results were communicated in the form of point-wise conclusions and recommendations thus made thereafter as per the requirements of the changes in the procedure and implementation of scientific management systems.
Further areas of research were also documented thereby providing new directions for researchers of the next generation.

3.2.10 RESEARCH TOOLS USED
Researcher has used Microsoft word for preparing master sheet of the questionnaire meant for data collection, analysis and interpretation. Further, researcher has used SPSS 17.0 for statistical analysis of the data. Since, Likert-scale type questionnaire method is used for getting responses from the respondents, researcher has used following tests for hypothesis responses from the respondents, researcher has used following tests for hypothesis testing:
  a) one sample t’ test
  b) Multiple regression analysis
  c) Anova
  d) Descriptive statistics