CHAPTER-2

RESEARCH METHODOLOGY

2.1 An Introduction to Research Methodology
2.2 Objectives of Study
2.3 Types of Research
2.4 Choice of the Product Field
2.5 Choice of Brand
2.6 Choice of Medium
2.7 Choice of Media Vehicle
2.8 Proposed Methodology
  2.8.1 Decoding of ads using Semiotics
  2.8.2 Decoding of ads - A Psychoanalytical Approach
  2.8.3 Decoding of ad - An Impact analysis
2.9 Research Design
  2.9.1 The Research Design to be followed
    2.9.1.1 Sampling Design
    2.9.1.2 Sampling Design adopted in the Present Analysis
    2.9.1.3 Forms of Sampling Design
    2.9.1.4 Observational Design
    2.9.1.5 Statistical Design
2.1. AN INTRODUCTION TO RESEARCH METHODOLOGY:

Research, in general, can be defined as the search for knowledge. Research can also be defined as a quest for relevant information about a particular topic. Research methodology can be formally defined as a route to solve the problem of the research study both scientifically and systematically. It not only explains which specific method is to be adopted but also explains why a specific method should be considered for analysis. It also explains why some other available methods are not considered for the specific research problem. It discusses why a specific topic be considered for research study; and the reasons behind the selection of specific source for data collection. It describes the method of data collection and the relevance of the collected data. It defines the techniques and tools to be used to arrive at the research findings. Thus, a research methodology consisting of logical problem clarifications can be developed centering the purpose and the specific objective of study.

In our present study to discuss our research methodology, we will also explain the above queries in terms of steps to be developed in logical sequence. But as the research methodology can only be adopted around a specific purpose or a set of objectives, we will first of all state the objectives of our study.
2.2. OBJECTIVES OF STUDY:

The objectives are guardian angels which determine and give direction to the entire research process. The objective of the study defines the kind of research method to be adopted, research design to be developed, information to be collected and analyses to be conducted.

In our present study, our objective is to decode the ads of a product to find out if there occurs any change in the way the product was portrayed and positioned. Our specific interest will centre around, the way women and the image of women are portrayed, to the age group and social class the company targeted, to the theme and appeal of the ad, the company adopted, to the perceived and projected attributes of the product and to the socio cultural aspects the advertiser projected. These we would like to study along the diachronic axis of time. We propose to examine these dimensions in the ads of Boroline over a long time span. Thereby we intend to study degree of association of these dimensions with time. We also like to investigate what the advertiser wanted to mean in subliminal level by studying the ad messages with the help of semiotic and psychoanalytical tools. We will then try to confirm if the decoding of the common people and our technical decoding converge.
2.3. TYPES OF RESEARCH:

There are various alternative ways, adopting which we may pursue our study. We propose to discuss these alternatives before we describe the particular method we want to pursue and the reasons for our selection.

Descriptive vs. Analytical Ways: Descriptive research consists of fact finding, enquiries of various kinds, surveys etc. This is a rigid process which gives description of the state of affairs as it exists at present. Here researchers have no control over the variables under study. It can also investigate the causes against the behaviour pattern of the variables. On the other hand, under analytical research method, researcher may pursue critical evaluation of behaviour pattern of certain parameters from the facts and information that is already collected.

In the present study, we have hardly any control over the variables like positioning of the product, theme of ads, image of women etc. as depicted through the ads. We will only observe and examine the movement of the variables describing the state of affairs with passage of time. Therefore, it can be said as descriptive research in parts. Our present study can’t be stated as analytical research. Because, we have to collect primary data to conduct impact analysis of the ads. Analytical researches are only pursued through rigorous analysis on the secondary data.
Applied vs. Fundamental Ways: Applied research finds solution to the problems faced by our society and the business organizations. On the other hand, fundamental research can be defined as gathering knowledge for the sake of knowledge. Here researchers work on generalization of theories and concepts.

Through our research work, we would like to examine how the advertiser tried to address the common people to promote its product. Here we are not studying a subject for generalization and formulation of some concepts. We are not pursuing research concerning some natural phenomenon. Thus our study may fall under the purview of applied research

Quantitative vs. Qualitative Ways: Quantitative research problem examines the movement pattern of variables that are quantitatively measurable. After gathering of information, the variables are analyzed by Mathematical and Statistical tools. Qualitative research investigates about those parameters and traits which can not be measured quantitatively. Qualitative research examines the subtle and latent causes behind projected human behavior in response to some kind of marketing or behavioral stimuli.

Again in our study we will collect data which are both quantitative and qualitative in nature. We will also examine how GD Pharmaceutical attempted to create the need for its product by addressing customers through
their unconscious mind. Thus this work obviously comes under the purview of the qualitative research. As the research work will have very substantial quantitative data, application of statistical tools for deriving result will generate apt answers to the research problems. Thus our research is partly qualitative and partly quantitative in nature.

Conceptual vs. Empirical Ways: A conceptual research pursues for the development of new concepts on a particular topic related to a particular subject. It may also add some new dimension to the existing concepts. On the other hand, empirical research tries to reach certain conclusion by examining the data collected through first hand observations and testing the validity or untenability of certain hypotheses. This type of research is appropriate when some proof is looked for to confirm the relationship between certain variables. Evidences reached through empirical studies are the best possible support for a hypothetical query.

In our work we will seek for the validity of some hypothetical queries. Again we will also find out what are the variables that affect which other variables. Thus our study is obviously an empirical research study. We will not endeavour for establishing new theories and concepts. Thus our study is never meant to be conceptual.
2.4. CHOICE OF THE PRODUCT FIELD

History of cosmetics is as old as the civilization itself. In ancient Egypt, women belonging to the affluent class of the society used to paint their eyelids. In ancient India, women had been depicted in front of the mirrors for seeking to enhance their beauty. Ancient China was famous for perfume, so was ancient Arabia. In those days, cosmetics were prepared from herbs directly and it was claimed that they had some medicinal values. Even today women, specially from North India directly use the juice, physically extracted from "Mehendi" to paint their palms.

Be that what it may with the onward march of modern chemistry, cosmetics are produced on a different scale in factories because of the high demand from the market. What Chemistry does is to extract the chemical properties of herbs or else produces identical elements in the laboratory and mix them and merge them into a unique solution, which is marketed as cosmetics.

Social, economic, and popular scientific trends converged in the early twentieth century to support the mass popularity of cosmetics. Twentieth-century magazine ads for personal care and beauty products reflected the contemporary belief that "science" was on the verge of being able to cure almost anything, including physical flaws and aging, and conveyed the imperative that "science" was ready to transform cosmetics users' lives if they would only let it. The prevailing themes of the time of individualism, materialism, and egalitarianism had an impact on the national attitude.
toward beauty and cosmetics. Also, a variety of trends can be ascribed to the
growth of the cosmetic industry, such as: (1) the spread of beauty parlors; (2) 
women's new assertiveness; (3) the growth of the pleasure ethic; and (4) 
savvy beauty entrepreneurs. Beauty and cosmetic industries made extensive 
use of magazine ads to entice their female prospects. It appears that cosmetic 
advertising may both reflect and reinforce (i.e. legitimize) the popular 
cultural concept of "scientific" progress and improvement.

2.5. CHOICE OF BRAND:

Boroline is a cream that ushered its pilgrimage as early as 1929 and reigned 
over the heart and mind of Bengalis almost for one full century. It has 
entered 21st century to serve its subjects with the same promise of beauty 
and hygiene. It began its journey with the promise of medication; then it 
shifted to win the hearts of Bengali women with the promise of a flawless 
skin. Then it tried to cash in on its medicinal properties again. It positioned 
itself with the idea of merging the gap between the beauty and hygiene, the 
gap between the attributes of cosmetics and the attributes of a medicine. 
Thus over the years it expanded its customer base from women to every body 
in the family. It is a cream that may protect the skin of the woman of the 
house against dryness and pollution. It is a cream which may be good to 
soothe the bruised knee of the little child in the house. It is the same cream 
that is being used by the man of the house as aftershave. With the passage of
time it has positioned itself as the part and parcel of Bengali life. Thus we
decided to examine and understand how did the veteran have walked all the
way to reach the position of accomplishment.

This is one of the every day use product that has attached itself with the
country’s national movement. Mr. Gaur Mohan Dutta who belonged to the
rich merchant family of Kolkata was an established trader of import and
export goods. He decided to join swadeshi movement. A practical patriot, he
was convinced that the best way to help India was to contribute to her
economic self sufficiency. He decided to manufacture products of a quality at
per with their foreign counterparts. He started manufacturing medicines in
1929, one of them was the legendary green tube Boroline. This anecdote
speaks eloquently how modern business activity took off during British reign.
It was the bourgeoisie that gave the call of freedom. The emergent
bourgeoisie class includes the merchant class also. And their fresh ventures
in the field of business activity were in fact actuated by their nationalism and
passion for country. Birlas and Goenkas and Dalmias joined the swadeshi
movement. So did Mr. Dutta. They wanted to oust the foreign capital from
the country’s market.

Apart from its rich history and heritage, Boroline is a product which is being
used by people who are rich and affluent and the people who are poor,
people who are city dwellers and the people who are villagers. This is a
cream which was used by people without discrimination of gender,
occupation, class etc. This pervasiveness is another reason why we decided to study the Boroline ads.

2.6. CHOICE OF MEDIUM:

We wanted to study ads for several decades following a single medium that too for a FMCG product, Boroline. Television is a medium, popularity and viewer ship of which has increased only recently mainly as it conveys ad messages in the form of both a verbal description and visuals in motion. In the 1960s, there were only a handful of people who could be identified as the privileged possessor of a television set. Thus that was a time when television was not recognized as an important and profitable platform for publicity. Thus this medium hardly allows us to study ads in the decades of 60s and 70s. Thus a study of ads again for an indigenous product for a span of 40 years of time compels us to ignore television as the medium. On the other hand, though Radio has also been a popular medium with a much denser penetration now for quite a long time, it only consists of only verbal message. Thus it decreases the opportunity of studying radio ads. On the other hand print medium has the most ancient history and it is the most popular and most exposed medium till date. The ads it portrays in print have a much greater retention in comparison to any other medium. Again in print medium, the weakly or bi-monthly magazine ads have a greater penetration. On the top of it the annual edition of a magazine has the greatest retention as
the readers of the magazine change pages of the magazine for quite a few months. Because of higher retentivity, a prospect and customer of a product may come across a single ad for a number of times. Thus with the increase in frequency, the total ad expenditure of the product sharply decreases. Thus a print ad in the annual issue of the most accomplished magazine is cost effective, which provides value for money to the company. Again as the people may view the same ad for a number of times and still do not lose interest neither from the product nor from the ad and of course from the magazine as a whole, the ads were created with a much higher level of seriousness.

2.7. CHOICE OF MEDIA VEHICLE:

We now propose to look at the ads of Boroline along the diachronic axis of time in Bengali vernacular. In our study we have taken into account a time span of 40 years in particular ranging from 1960s to 2000. Here we have chosen Sharadia Desh as the theatre for its advertisements. Here we have chosen Desh as it had witnessed and authored many a big and small facades of history of Bengal. Practically in the 1970s Desh was the only weekly journal of repute. All contemporary masters of Bengali literature contributed articles and poetry to it. Since a long time, Desh has been the representative magazine for Bengali literature and culture. Side by side, there were Amrita Bajar, published by Yugantar news paper, Basumati.
published by Basumati Publication. But paled beside wide distribution, glory and status of Desh. Desh publishes special issues to reflect special occasions. On the whole the Sharadia issue of Desh is the most prestigious issue that comes out every year in the months of autumn. The Autumnal festival in Bengal rejoices over the killing of the demon Mahishasura by Goddess Durga. Rich and poor, every one in Bengal, participates in this festival equally. Hence this festival issue is of singular importance. Just as a poor man also buys new clothes for his children during the time of this Autumnal festival, similarly every company however poor or rich tries to put forward the ad of its product in the Autumnal issue of magazine as the readership and circulation of this yearly edition is again multiplies for the attraction of prose, poetry, articles specially authored by the most popular and most accomplished writers and critics of Bengal.

2.8. PROPOSED METHODOLOGY:

2.8.1. Decoding of ads using Semiotics:

In the next chapter we propose to study ads of Boroline following semiotics which can be defined as a science of sign. Here all different types of communications including articles, ads, cartoons, posters, movies, prose, and poetry are said to be a cluster of signs. Again many of these signs are meaningful only to a particular culture. Here to begin with we discussed the importance and need for the application of Semiotics. Most of the signs are
not what they seem from the surface. Many a time the communication may mean some thing very different from their surface level meaning. Thus all level of communications especially advertisements need to be decoded with Semiotics. Then we put across a brief introduction of the semiotic tropes and terminologies that we will use to decode a series of Boroline ads. Then we have studied and briefly discussed various books, articles and papers that have used semiotics to decode ads. Then we will decode a series of ads using semiotics to find out another level of meaning.

2.8.2. Decoding of ads - A Psychoanalytical Approach:

We would first of all propose to study the ads of Boroline for last 40 years following psychoanalytical tools introduced by Lacan and Frued. Here we will study how the tool of psychoanalysis help marketers to procreate ads that that might appeal to the consumers’ subconscious mind to create a drive for purchase. Then we will study some past references where Marketers have used and utilized psychoanalysis to create exchangeable market value. Then we will study the point of conjunction between psychoanalysis and literature. Then we will pursue why we need to criticize literature and how knowledge of psychoanalysis may be instrumental for more comprehensive literary criticism. Then we have explained how advertisement can be taken as a form of literature. Then we explained whom we are following for the purpose and why are we considering them. Then we endeavoured to decode a series of ads
for Boroline. Here we could not pursue a detailed literature review as we could not get access to the papers and articles where psychoanalysis has been used as a tool to decode or criticize. In the chapter appendix we put across a brief view on psychoanalysis of Lacan and of Freud as we have used their approach in our analysis. We have also added a chapter glossary to briefly explain the various terms and tropes of psychoanalysis that we used in our present study.

2.8.3. Decoding of ad- An Impact analysis:

In chapter 1, we proposed to pursue an impact analysis of the ads. This impact analysis will be conducted in two phases. First, we will select a set of ads as the representatives of the universe of 40 ads published in the 40 consecutive years, mentioned earlier. These are the ads which seem to be important as they depict either some sort of addition or deletion to the previous ads or a major change from the rest in the existing frame. On the basis of these ads, a questionnaire will be framed so that respondents may answer only on the basis of visuals of the ads. We propose to investigate in to the matters like how the ads have portrayed various attributes of the cream. We shall also record changes in those attributes over the years. Further the questionnaire has been so framed as to see how the company portrayed women from time to time. After conduction of the surveys we will compare the statistically treated results of to the technical studies.
2.9. RESEARCH DESIGN:

To effectively attack our research problem, it would be wise to first decide the frame and structure of the study in details that is the research design. For this, we propose to unfold the research problem into an array of logically dismantled queries which will be addressed in sequence to arrive at the complete solution to the problem.

The research design is the conceptual structure within which the research will be conducted covering collection, measurement and analysis of data which will make the analysis more reliable, and error free. Research design will lead to the advance planning of the methods to be adopted for collecting the required data and the techniques that can be adopted for their analysis, keeping in mind the main goal of the research. Research design has a great part to play on the reliability of the results arrived at. It constitutes a rock-wall foundation of the entire research work. A good research design can only be framed looking at the objective and the nature of the research problem. There is no design that will fit like a glove to every kind of research problem. If the research study is of the exploratory in nature, discovery of new ideas and flexibility of the design are to be emphasized. But when a research is conducted to unearth the association among a few problem variables, accuracy becomes the pivotal element. If the research is causal, where
inferences are required to be made about the relationship between the
variables, minimization of bias and maximization of reliability become most
urgent. Thus, to begin with the concerned research study the problem under
consideration is to be categorized either as an exploratory, or descriptive or a
causal study. According to categorization the choice of research design can
be made.

Research Design for Exploratory Research:
The main purpose of the exploratory or formulative research studies is to
generate problem for more precise investigation from the operational point
of view. Major emphasis in such studies lies in the generation of new ideas
and insights. Thus, the research design, appropriate for such studies, must be
made sufficiently flexible to provide opportunity for considering different
aspects of a problem under study. Flexibility is the necessary for
transforming a broadly defined research problem to a precisely defined one,
with the help of survey of related references, experience survey and case
analysis. Experience survey is the survey of experienced people, who have
more detail knowledge in the relevant field. For experience survey a
judgment sampling or purposive sampling might be more beneficial.
Research Design for Causal Research:

In causal research studies, researchers test the hypothesis of causal relationships between variables under study. Such studies require well-framed procedures which will permit the act of drawing inferences along with reducing bias and increasing reliability. For pursuing empirical studies, usually the causality is first of all conceived in a theory that describes an event in terms of cause and effect relation. The relation is then tested empirically. In the causal studies, the variables are first understood in terms of explained and explanatory variables. The causation is further termed as deterministic, when the identified, explanatory variables can fully define the explained variable.

Research design for Descriptive or Diagnostic Research:

The research design for descriptive studies requires rigid and categorically defined process. The basic issues consisting of collection and processing of data and reporting of findings are to be addressed properly. Any reduction in the rigidity may make the findings biased and unreliable. It would be better if the instrument of data collection is pre-tested. The various tools that are mainly used for the descriptive and diagnostic research, are observation, questionnaire, interview and earlier reports. The sample units are chosen from the lay out of any rigidly defined sample design. A probability sampling is considered to eliminate chance of occurring any sort of bias. An
observational design should be carried out only with structured tools. Conceptual strictness is to be adopted meeting the need for advance decisions on the administrative process to make the said design operational.

2.9. 1. The Research Design to be followed:

We have mainly followed an exploratory research design and partly followed a causal research design. The part of the study, where we endeavored to find out the meaning through semiotics and psychoanalysis, we have followed the exploratory research design as we have to redefine our problem more precisely after studying substantially on the said subjects. In the next phase of our study, we have adopted the causal design for find out the points of communality and aberration in the ad-claims as extracted from the technical analysis and the survey.

The four major components of research design are sampling design, observational design, statistical design and operational design. Sampling design provides for the method of selecting the items from the universe. Observational design frames the conditions and modalities under which the selected units are to be observed. For deciding the desired sample size and developing the analytical procedure for extracting information from the raw data, a statistical design is recommended. The operational design consists of the plans for implementation and execution of the aforesaid designs.
2.9.1. 1. Sampling Design:

The researcher may opt for sample survey when the complete enumeration is impossible to reach considering availability of time and fund. A sample survey might be more error free in comparison to the complete enumeration as there can be a better control of non-sampling error.

A sample design is a precise road map for obtaining a sample from a given population. It will refer to all the procedures that the analyst will follow for selecting items from the population. There are various types of sampling design that one may follow. The two major types are probabilistic and non-probabilistic sampling. Researchers will follow a particular design tool, keeping in mind, the requirement of the study, economy and convenience.

2.9.1.2. Forms of Sampling Design:

The probabilistic sampling can be pursued in the following forms:

Simple Random Sampling: By simple random sampling we mean each item in the universe has an equal chance of getting selected in the sample through out all stages of selection. Simple random sampling is of two types namely, simple random sampling with replacement (SRSWR) and simple random sampling without replacement (SRSWOR). In SRSWR, at every stage of
selection there are as many units in the universe as they were before. Thus if there are N units of items in the population, at every stage of selection, the probability of each item to be getting selected will be 1/N. For SRSWR, in the selection of first item, there will be N units in the universe. But in the selection of second item, there will be N-1 items in the universe and so on. The probability of the first item to be getting selected will be 1/N, probability of the second item to be selected from the universe will be 1/(N-1). This concept has better applicability when the universe is not very large.

Systematic Sampling: This is a special form of simple random sampling. Here the analyst starts with a list of all respondents in the universe and then determines the required sample size. If we consider the size of universe is N and the sample size is N/n, the analyst may divide the whole universe into (N/n). Then a simple random sampling can be easily pursued from each of these divisions. This method is easier to apply in comparison to the simple random sampling. It takes less time to select the complete sample.

Stratified Random Sampling: This is again specific version of the simple random sampling. In stratified random sampling, the universe is divided into different strata and from each stratum sampling units are drawn based on the process of simple random sampling. Here to nullify the error terms, it is required that in a single stratum, the variation among various units will be
minimum and the variation among items of various stratum will be maximum. Stratified random sampling generates more accurate data and is easier to administer in comparison to simple random sampling.

Cluster Sampling: Here the entire population is divided into identifiable subsets. These subsets are called clusters. Afterwards, a sample cluster is selected by simple random sampling from the population. For the chosen clusters, all units belonging to the clusters are to be studied for the survey work. A cluster could be identified on the basis of any particular criterion. This method generates better results if there is a large number of clusters and the cluster size is small. This method may provide better applicability when data is to be collected for some common characteristics of the population.

Multistage Sampling: As the name indicates, in this method, analyst does not choose the final sample in one stage. Two stages are combined and combined in cluster sampling. Here two or more stages are combined and sometimes two or more different methods of probability sampling techniques are applied. This sampling plan is widely used in various market research studies and National Opinion Polls for the ease of administering and flexibility.
Non-Probabilistic Sampling Design: So far various methods of probabilistic sampling design are discussed. In reality probabilistic sampling techniques are difficult to pursue as they involve difficulties in obtaining reliable list of desired target population. Again non-probability sample techniques can be used in cases where conducting a probability sampling technique is not at all feasible. In few other cases a non-probability sampling technique can be used along with the probabilistic sampling technique. The non-probabilistic design is easier to pursue and more convenient. But the main drawback of this design is that, the extent of bias that is generated in the process is not known. This makes it more difficult to measure the extent representative-ness and accuracy of a sample. Apart from all these faults, if done consciously, some of these non-probabilistic design techniques are good approximation for the probabilistic sampling design techniques, if pursued adroitly. The non-probabilistic sampling can be pursued in the following forms:

Convenience Sampling: In this method a sample is selected based on the convenience of location and contacts of the analyst for collecting data. It is easy to administer and economical. But the result obtained are not accurate for inferring the behaviour pattern of the whole universe.

Quota Sampling: In this method the universe is divided into required number of groups. The analyst decides about the number of units to be
covered from particular group to select the items. The selection of items from each group or cluster completely depends on the likeability of the analyst. The analyst may or may not resort to simple random sampling method. He might also pursue convenience sampling for accomplish the same. Therefore quota sampling is a mixture of stratified and convenience sampling.

Judgment Sampling: The method relies on the judgment and precision of the analyst as to who should be included in the sample. This method is adopted when a researcher selects sample members to conform to some criterion. A judgment sampling is appropriate when the analyst wishes to select a biased group for screening the desired objectives. In many cases this technique is a better choice even in comparison to the probabilistic techniques. This is also widely adopted by the market research organizations.

Snowball Sampling: This method is adopted when the population undertaken is small in size and discretely dispersed over a vast region of study. Thus finding them out through traditional means and measures is hardly possible. For example finding out the lawn tennis player in a city, can only be made possible through references. One respondent being used to generate names of others is called snowballing. This method is useful for niche markets. But sample drawn in this method may not be good representative of the universe.
2.9. 1. 3. Sampling Design adopted in the Present Analysis:

For our research study, it could have been desirable to adopt stratified random sampling because we may conceptually divide the population into two strata considering gender as the criterion for the division. Then we may draw sample units from each stratum on the basis of simple random sampling where each member from a particular stratum will have equal chance to be selected. But as the population is vast and the sampling frame is not available, stratified random sampling can not be pursued. For the same reason we will not be able to pursue a systematic sampling or a cluster sampling. But, in absence of population frame, we could have applied multistage sampling design. But that would be a very large scale approach, and we may not adopt it due to the operational inconveniences.

While we look for non-probabilistic sampling, we will not be able to adopt the snow ball sampling method as population size for our work is very large. Snowball sampling can only be pursued in a research work when the population size is comparatively small. We will not be able to pursue quota sampling to avoid operational inconveniences. Again there are other reasons which also pose as constraints in framing a required sampling design. These problems are as follows:
Our questionnaire is partly technical in nature. It does not require any expert knowledge in the subjects of semiotics and psychoanalysis but a basic knowledge in Management may help them to give a better judgment to many of our queries.

ii. To investigate the views of the respondents for the ads that were published in a time frame of 40 years, the questionnaire is lengthy.

Thus it is difficult to get the questionnaires filled up either by a layman or by any body who is not ready to devote sufficient time (at least 30 minutes).

Thus, we have to conduct this survey according to our convenience. We have decided that we will conduct this survey work by the students of any management institute. This is because, they will possess the basic Management knowledge and they may feel the experience of filling up questionnaire rather interesting.

The ads which we have selected for pursuing our research are in Bengali vernacular. We propose to conduct our survey work on the respondents who are ignorant of Bengali vernacular. In that case, it may be easier to collect unbiased responses. We have decided to select Delhi for our survey work. To reduce bias further from our study, we propose to randomly select one Management institute from all the existing Management institutes in Delhi and National Capital Region. We will get our questionnaires filled up by the
senior batch students, of the selected Institute thereby meeting criteria of the study. But this adoption of convenience sampling may bring us several limitations. The probable limitations are as follows:

- We may get less number of female respondents in comparison to the male respondents.
- The sample may not be the true representative of the group.
- The sampling error can not be objectively measured.

2.9.1.4. Observational Design:

The main requirement for empirical research is data. In the empirical research, the collection and handling of data are very important. Data are of two types, primary and secondary data. Primary data are generally collected by the analyst herself. The secondary data are the data which are collected for some other purpose, but are used and utilized by the analyst.

Collection of primary Data:

There are several methods by which primary data can be collected.

The important methods are discussed as follows:

Observational method: This method for data collection deals with making a structured and systematic observation of any measurable attribute of the respondents. Here the measurable attribute of the respondents is observed.
focusing on the problem question of the research study. There are several reasons for gathering primary data. Under this method, the analyst may not interact with the respondents because, data is collected by the analyst’s direct observation and not by questioning the respondent. This eliminates the possibility of error due to misrepresentation and omission of the facts along with the subjective bias. This method also suffers from the following major limitations:

This method is very expensive. This method may not bring exhaustive information required for the entire work.

For our study, we will not use this method for data collection as our work needs the respondents to view several ads and thereby are supposed to give their individual responses to the analyst.

Interview Method: Under this method, the analyst generally is required to talk to the respondents to collect their views about any particular marketing or behavioral stimulus. Though this method is widely used for collection of primary data, it may not be that suitable for our research problem as it suffers from some major drawbacks. This method may suffers from the subjective bias both from the part of the respondent and the interviewer. This method is expensive and time consuming.
Questionnaire Method:

In this method of data collection, the queries are framed in a structured format focusing on the informational requirement of the research study. Then the questionnaire is either mailed or posted or directly administered to the respondents for the answers. The questionnaire generally contains two sets of questions. One set is related to the research problem and another set consists of demographic queries on the respondents. The questionnaire must be carefully designed, questions must be clear, to the point, logically arranged and exhaustive. The queries in the questionnaire can be framed in the following forms:

Open Ended Question: These are the questions where the answers against questions are not fully fixed. As a result, a respondent is free to answer a query without any restriction. The brand recall related questions, which enquires about Boroline's position as beauty cream and antiseptic cream are open ended.

Close Ended Questions: These are the questions where the respondent selects one of the alternative possible answers put to him. The questions related to the targeted age group, mode of promoting the product, the choice of
addressee in the selected segment and projected value system through the ads are close ended.

Probing Question: These are the questions, where the respondents are asked a linked question following the trail of a previously asked question. The question enquiring about the projected culture in the ads is a probing question.

Scaling Questions: These are the questions, where the respondents are either asked to compare different objects by giving ranks or rate an object based on different criterion variables. The question, related to the strength of attributes of Boroline through the ads is a scaling question.

We will follow a questionnaire method for collecting primary information regarding our problem. In this method we will let the respondents of the selected sample, answer our questions on the spot. We will avoid getting our questionnaires filled up by respondents either through post or email. It is because our questionnaire is a bit lengthy and thereby having a greater chance to be ignored by the respondents.
Goodness of Questionnaire:

A suitable measurement or data collection method must ensure validity, reliability and practicality. Validity refers to the extent to which a test measures what the analyst actually wishes to measure. A measurement instrument needs to comply with the content validity and criterion validity and construct validity respectively (Cooper and Schindler, 1999, pp 167-170). A measuring instrument is reliable as long as it provides consistent results. The compliance for reliability is a must for the validity of an instrument but it is not sufficient. An instrument may be called reliable once they comply with stability, equivalence and internal consistency (Cooper and Schindler, 1999, pp 171-173).

A measuring instrument might be valid and reliable but may not be operational or practicable. To comply with practicability, it must be economical, convenient and interpretable (Cooper and Schindler, 1999, pp 174).

We have developed our questionnaire in such a way that it can meet some of these criteria.

In our questionnaire we want to cover the areas like overall positioning of the product, socio - cultural aspect depicted by ads, age group, the company
targeted, the representative of the target market addressed by the company in ads, the mode of projection of product in the ads, the attributes which are focused in the ads, the cultural issues portrayed by the ads and the way women were portrayed through the ads. We would also want our questionnaire to measure if any change is noticed in the above mentioned areas over the years.

Here we describe how adroitly our questionnaire frames all the above mentioned areas.

The brand recall of Boroline as beauty cream and as antiseptic cream is our area of interest. Accordingly, we have designed Q1 and Q2 (see Annexure-2).

We propose to know whether through the signs, symbols and images in the ad, the advertiser has tried to portray social custom or religious practice or motherhood or nature. These issues are addressed in Q3. (see Annexure-2).

We propose to know the particular age group, the advertiser has projected in the ads. We have addressed this issue under Q4 (see Annexure-2).
We propose to examine particular group of customer, the advertiser has addressed through the ads. We have covered this issue in Q5 (see Annexure-2).

We propose to study whether directly or indirectly or based on attribute or based on tradition, the advertiser promoted the product in the ads. This issue is addressed in Q6 (see Annexure-2).

We propose to know the strength of different attributes of Boroline projected in the ads. This issue is addressed in Q7 (see Annexure-2).

We propose to examine how the culture is portrayed in the ads. This issue is addressed in Q8 (see Annexure-2).

We propose to examine how the value system portrayed through the images of women in the ads We will addressed in Q9 (see Annexure-2).

To make the questionnaire more structured, we have framed more of close ended questions and less of open ended questions. All questions are so constructed as to form a logical part of a well planned tabulation plan.

2.9.1.5. Statistical Design

To determine the validity of a concept, in the light of the collected data, statistical technique of hypothesis testing is widely recommended. Under this
method, sometimes, the analyst has to choose one of the two alternative concepts involving the population parameters. These are known as parametric tests. In case the population distribution is not known, analyst has to take the course of nonparametric test. We would install a chi square test to measure the association between the different problem attributes. Mostly one of the attributes will be time. This will be a nonparametric test. In case an association is established, we may like to undertake within attribute or between attributes test for equality of proportions. this will be a large sample parametric test based on asymptotic normal distribution. We also propose to use the regression approach for investigating the perceived attributes of product type.

Test for association of attributes:
We have all ready stated in our objective under section 2.2, that, we will examine how the various dimensions projected in the ads underwent changes over time.

Our first dimension is image/sign/symbol portrayed in the ads. We would like to investigate if image/sign/symbol portrayed in the ads and the time frame in the analysis, are associated or not. Requisite data will be obtained from question number 3. The corresponding information will be presented in
a two way classified form, cross tabulation being done according to time and image/sign/symbol portrayed.

Our second dimension is age group targeted in the ads. We would like to investigate if the age group targeted and the time frame in the analysis are associated or not. Requisite data will be obtained from question number 4. The corresponding information will be presented in a two way classified form, cross tabulation being done according to time and the age group portrayed.

Our third dimension is representative of customers and prospects addressed. We would like to investigate if the representative of customers and prospects addressed and the time frame in the analysis are associated or not. Requisite data will be obtained from question number 5. The corresponding information will be presented in a two way classified form, cross tabulation being done according to time and the representative of customers and prospects addressed.

Our fourth dimension is the mode of promoting the product directly, indirectly, based on attributes and based on tradition. We would like to investigate if the and the mode of promoting the product and time frame in the analysis are associated or not. Requisite data will be obtained from.
question number 6. The corresponding information will be presented in a two way classified form, cross tabulation being done according to time and the mode of promoting the product.

Our fifth dimension is the various attributes (skin cream, family cream, antiseptic cream, medicated cream and beauty cream) of the product reflected in the ads. We would like to investigate which particular attribute is given importance in which particular ad. Requisite data will be obtained from question number 7. The corresponding information will be presented in a two way classified form, cross tabulation being done according to time and the attributes. To carry out attribute analysis we will calculate average ranks assigned by the respondents. The attributes for which the average rank value is maximum, has been considered as the projected attribute. The entire analysis will be undertaken separately for male and female respondents. Thereafter we will conduct a gender wise comparative study.

Our sixth dimension is culture portrayed through religion, art and grooming portrayed in the ads. We would like to investigate if culture, portrayed in the ads and the time frame in the analysis are associated or not. Requisite data will be obtained from question number 8. The corresponding information will be presented in a two way classified form, cross tabulation being done according to time and culture portrayed.
Our seventh dimension is the value system projected through the female figures in form of various personality traits such as achiever, situation depended, blurring gender role, over aggressive, manly, feminine, insignificant, simple and dynamic respectively. We would like to investigate if culture, portrayed in the ads and the time frame in the analysis are associated or not. Requisite data will be obtained from question number 9. The corresponding information will be presented in a two way classified form, cross tabulation being done according to time and culture portrayed. The analysis will be undertaken in chapter-5. In this chapter, we will introduce the basic formulation for requisite test.

The concept of Pearsonian $\chi^2$ can be of help in examining the independence of two attributes A and B.

Let

$H_0$: Attributes A and B are independent to be tested against the alternative

$H_a$: Attributes A and B are associated.
Writing \( f_{ij} \) as frequency of observations belonging to \( i^{th} \) form of attribute A and \( j^{th} \) form of attribute B, \( i=1,2,\ldots,m; \ j=1,2,\ldots,n \), we may express the Pearsonian \( \chi^2 \) as

\[
\chi^2 = \sum_{i=1}^{m} \sum_{j=1}^{n} \left( f_{ij} - f_{0i} f_{0j} / N \right)^2 / (f_{0i} f_{0j} / N)
\]

where

\[
f_{0i} = \sum_{j=1}^{n} f_{ij}, \quad f_{0j} = \sum_{i=1}^{m} f_{ij}, \quad N = \sum_{i=1}^{m} \sum_{j=1}^{n} f_{ij}
\]

If the \( \chi^2 \) observed < \( \chi^2_{a,v} \), where \( v \), the degrees of freedom is equal to \((m-1)(n-1)\), \( H_0 \) is accepted at 100\( \alpha \)% level of significance. Otherwise \( H_0 \) is rejected in favor of \( H_a \).

Large sample Test for proportion:

We will undertake the test for proportion to test the significance of the brand recall proportion of Boroline as a beauty cream and an antiseptic cream. Requisite data will be obtained from question number 1 and 2. The analysis will be undertaken in chapter-5. In this chapter, we will only introduce the basic formulation for requisite test.
Let the random variable $X$ follow binomial distribution with pmf

$$p(x) = \binom{n}{x} \theta^x (1 - \theta)^{n-x}$$

And we need to test $H_0 : \theta = \theta_0$. Viewing $\theta$ as the mean of $(X/n)$, we consider the sample proportion $\hat{\theta} = X/n$ as the sample mean. For large $n$

$$z = (\hat{\theta} - \theta_0) \sqrt{\frac{\theta_0(1-\theta_0)}{n}}$$

follows asymptotically normal distribution $N(0,1)$, under $H_0$. Hence the large sample decision rules for different alternative hypothesis can be developed along the following lines for $100\alpha\%$ level of significance.

<table>
<thead>
<tr>
<th>Alternative hypothesis</th>
<th>Decision Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_a : \theta \neq \theta_0$</td>
<td>Reject $H_0$ in favor of $H_a$ if $</td>
</tr>
<tr>
<td>$H_a : \theta &gt; \theta_0$</td>
<td>Reject $H_0$ in favor of $H_a$ if $</td>
</tr>
<tr>
<td>$H_a : \theta &lt; \theta_0$</td>
<td>Reject $H_0$ in favor of $H_a$ if $</td>
</tr>
</tbody>
</table>
Large Sample Test for equality of two proportions:

In case of an established association between various attributes and the time frame of analysis, we will examine the point of change in the following:

We will try to find out the point of change, if any in the sign, symbol and image projected in the ads, in case, they are associated with time. The requisite information can be obtained from question number 3.

We will try to find out the point of change, if any in the targeted age group as projected in the ads, in case, it is associated with time. The requisite information can be obtained from question number 4.

We will try to find out the point of change, if any in the targeted market segment as projected in the ads, in case, it is associated with time. The requisite information can be obtained from question number 5.

We will try to find out the point of change, if any in the mode of promoting the product as projected in the ads, in case, it is associated with time. The requisite information can be obtained from question number 6.
We will try to find out the point of change, if any in the culture as projected in the ads, in case, it is associated with time. The requisite information can be obtained from question number 8.

We will try to find out the point of change, if any in the value system as projected in the ads, in case, it is associated with time. The requisite information can be obtained from question number 9.

The analysis will be undertaken in chapter-5. In this chapter, we will only introduce the basic formulation for requisite test.

For two independent binomial populations denoted by pmfs:

$$p_1(x_1) = \binom{n_1}{x_1} p_1^{x_1} (1 - p_1)^{n_1 - x_1}$$

and

$$p_2(x_2) = \binom{n_2}{x_2} p_2^{x_2} (1 - p_2)^{n_2 - x_2}$$

The population proportions are $p_1$ and $p_2$ and sample proportions are $\hat{p}_1 = x_1 / n_1$ and $\hat{p}_2 = x_2 / n_2$. The null hypothesis to be tested is $H_0 : p_1 = p_2$.

Writing $\bar{p} = (x_1 + x_2) / (n_1 + n_2)$ the pooled estimator of population proportion when $p_1 = p_2$. We may suggest the test statistics as

$$z = (\hat{p}_1 - \hat{p}_2) / \sqrt{\bar{p}(1 - \bar{p})(1/n_1 + 1/n_2)},$$
Which follows asymptotically normal distribution $N(0,1)$ under $H_0$. The
decision rules for different alternative hypotheses are given below for $100\alpha\%$
level of significance.

| Alternative hypothesis | Decision Rule | Accept $H_0$ if $|T_{observed}| > Z_{a/2}$ | Accept $H_0$ otherwise |
|------------------------|---------------|------------------------------------------|------------------------|
| $H_a : p_1 \neq p_2$   | Reject $H_0$ in favor of $H_a$ if $|T_{observed}| > Z_{a/2}$ | Accept $H_0$ otherwise |
| $H_a : p_1 > p_2$      | Reject $H_0$ in favor of $H_a$ if $|T_{observed}| > Z_{a}$ | Accept $H_0$ otherwise |
| $H_a : p_1 = p_2$      | Reject $H_0$ in favor of $H_a$ if $|T_{observed}| > Z_{p/2}$ | Accept $H_0$ otherwise |

Regression Analysis:

We will pursue regression analysis to find out the regression co-efficient
which will in turn explain if the strength of the attribute increases or
decreases. The requisite information can be obtained from question number
7. The analysis will be undertaken in chapter-5. In this chapter, we will only
introduce the basic formulation for requisite test.
In regression analysis, we make use of a relationship among variables to predict one from the rest. The variable to be predicted is called dependent variable and let it be represented by the symbol “y”. The variable/variables that determine the value of dependent variable are called independent variables or predictors and let them be represented by \( x \).

In general we may have \( k \) predictors to predict a depended variable \( y \). Let the predictors be denoted by \( x_1, x_2, \ldots, x_k \).

Usually we get a complete set of \( n \) observations.

\[
(y_\alpha, x_{1\alpha}, x_{2\alpha}, \ldots, x_{k\alpha}), \alpha = 1, 2, \ldots, n
\]

based on which a relationship model between \( y \) and \( (x_1, x_2, \ldots, x_k) \) can be developed.

The simplest relationship is a linear relationship where,

\[
y = a_0 + \sum_{j=1}^{k} a_j x_j + \epsilon
\]

\( a_1, \ldots, a_k \) being regression coefficients, \( a_0 \) being a constant and \( \epsilon \) being the error term following normal distribution in the ideal situation. We may, obtain expressions of error terms as follows:

\[
y_\alpha = a_0 + \sum_{j=1}^{k} a_j x_{j\alpha} + \epsilon_\alpha
\]

Or,

\[
\epsilon_\alpha = y_\alpha - a_0 - \sum_{j=1}^{k} a_j x_{j\alpha}
\]

86
If one employs least square method for estimation of the parameters 

\((a_0, a_1, \ldots, a_k)\), one minimizes 

\[ S = \sum_{a=1}^{n} \varepsilon_{a}^{2} \]

with respect to 

\((a_0, a_1, \ldots, a_k)\). The resultant equations are 

\[ \frac{\partial S}{\partial a_0} = 0, \frac{\partial S}{\partial a_1} = 0, \ldots, \frac{\partial S}{\partial a_k} = 0 \]

The equations are known as normal equations. In this linear regression model the normal equations are 

\[ \sum_{a=1}^{n} y_{a} = na_0 + \left( \sum_{a=1}^{n} x_{1a} \right) a_1 + \left( \sum_{a=1}^{n} x_{2a} \right) a_2 + \ldots + \left( \sum_{a=1}^{n} x_{ka} \right) a_k \]

\[ \sum_{a=1}^{n} y_{a} x_{ja} = \left( \sum_{a=1}^{n} x_{ja} \right) a_0 + \left( \sum_{a=1}^{n} x_{1a} x_{ja} \right) a_1 + \ldots + \left( \sum_{a=1}^{n} x_{ka} x_{ja} \right) a_k \]

\[ j = 1, 2, \ldots, k \]

The first equation gives:

\[ \bar{y} = a_0 + \bar{x}_1 a_1 + \ldots + \bar{x}_k a_k \]

If we multiply this above equation with \(n\bar{x}_j\) and subtract from jth equation of the remaining set, \(j = 1, 2, \ldots, k\), we get the following equation.

\[ \sum_{a=1}^{n} y_{a} x_{ja} - n\bar{y}\bar{x}_j = a_1 \left[ \sum_{a=1}^{n} x_{1a} x_{ja} - n\bar{x}_1 \bar{x}_j \right] + \ldots + a_k \left[ \sum_{a=1}^{n} x_{ka} x_{ja} - n\bar{x}_k \bar{x}_j \right] \]

\[ j = 1, 2, \ldots, k \]

\[ S_j = a_1 s_{1j} + a_2 s_{2j} + \ldots + a_k s_{kj} \]

\[ j = 1, 2, \ldots, k \]
\[ S_{ij} = \sum_{a=1}^{n} x_{ia} x_{ja} - n \bar{x}_i \bar{x}_j = \sum_{a=1}^{n} (x_{ia} - \bar{x}_i)(x_{ja} - \bar{x}_j) \]

Where \( i,j=1,2,\ldots,k \).

\[ S_{ij} = \sum_{a=1}^{n} y_a x_{ja} - n \bar{y} \bar{x}_j = \sum_{a=1}^{n} (y_a - \bar{y})(x_{ja} - \bar{x}_j) \]

writing \( S = (S_{ij}) \) the matrix of order \( k \times k \) with \((i,j)\) the element as \( S_{ij} \),

\( S_y = (S_{y1}, S_{y2}, \ldots, S_{yk}) \) the vector of order \( k \times 1 \)

and \( a = (a_1, a_2, \ldots, a_k) \) the vector of order \( k \times 1 \)

we have \( S_a = S_y \)

Here \( \hat{a} = S^{-1} S_y \)

\[ \hat{a}_0 = \bar{y} - \hat{a}' \bar{x} \]

Thus, from \((k+1)\) equations we can estimate the \( k=1 \) parameter \( a_0, a_1, \ldots, a_k \) with the estimated values \( a_0, a_1, \ldots, a_k \). Then the regression equations can be expressed as \( y = \hat{a}_0 + \hat{a}_1 x_1 + \ldots + \hat{a}_k x_k \)

A measure for goodness of regression is the square of the multiple correlation coefficient, \( R^2 \), where

\[ R^2 = \frac{\sum_{a=1}^{n} (\bar{y}_a - \bar{y})^2}{\sum_{a=1}^{n} (y_a - \bar{y})^2} \]

\( R^2 \) lies between 0 and 1 and a value of \( R^2 \) close to 1 indicates goodness of linear regression model.
To test for the suitability of the multiple linear regression, one may follow the ANOVA method as presented in the following table:

**ANOVA TABLE**

<table>
<thead>
<tr>
<th>Sources of variation</th>
<th>degrees of freedom</th>
<th>sum of squares</th>
<th>Mean squares</th>
<th>F-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due to linear regression</td>
<td>k</td>
<td>SSR = \sum_{j=1}^{k} \hat{a}_j s_j</td>
<td>MSR = SSR/k</td>
<td>F = MSR/MSE(\text{observed})</td>
</tr>
<tr>
<td>Error</td>
<td>n-k-1</td>
<td>SSE = \sum_{\alpha=1}^{n} (y_\alpha - \bar{y})^2 - \sum_{j=1}^{k} \hat{a}_j s_j</td>
<td>MSE = SSE/(n-k-1)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>n-1</td>
<td>\sum_{\alpha=1}^{n} (y_\alpha - \bar{y})^2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The decision rule is to accept the suitability of linear regression if \( F_{\text{observed}} > F_{\alpha, k, n-k-1} \) otherwise we consider the regression coefficients to be all insignificant (Roy, 2006).
Bibliography:


- Roy Dilip(2006), Research Methodology, Netaji Subhas Open University, Kolkata.
ANNEXURE - 2.1

(Questionnaire)
Questionnaire for a Market Survey on Skin Cream
(Please make a thorough observation to the advertisement to answer the following)

1. If we say beauty cream which brand do you recall? (Name only one brand).

2. If we say antiseptic cream which brand do you recall? (Name only one brand)

3. In case images / signs / symbols have been portrayed, that represent (Strike only one option)
   a. Social custom
   b. Religious practice
   c. Motherhood
   d. Nature
   e. Others

4. The product promoted by the ad is meant for (Strike only one option)
   a. Kid
   b. Teenager
   c. Young in age
   d. Middle aged
   e. Old
   f. All
   g. Others
5. The visual portrays the representative of (Strike only one option)
   a. Buyer
   b. Buying decision maker
   c. Influencer
   d. User of the product under study
   e. A mere visual
   f. Others

6. How does the advertiser promote the product? (Strike only one option)
   a. Directly
   b. Indirectly
   c. Based on attributes
   d. Based on tradition
   e. Others

7. Rank the attributes of Boroline as revealed in the visual on a 6 point scale
<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
</tbody>
</table>
   a. Skin cream
   b. Family cream
   c. Antiseptic cream
   d. Medicated cream
   e. Beauty cream

2.1.2.
8. The culture is portrayed through (Strike only one option)
   a. Religion
   b. Art
   c. Grooming
   d. Others

9. Which is the value system projected through the female figure portrayed in the visual? (Strike only one option)
   a. Achiever
   b. Situation dependent
   c. Blurring gender role
   d. Over aggressive
   e. Manly
   f. Feminine
   g. Insignificant
   i. Simple
   j. Dynamic
   k. Others
Personal Details of the respondent:

Name:

Address:

Gender: Male ☐ Female ☐

Occupation:

Age: Less than 20 years ☐, 20-30 years ☐, 30-40 years ☐, More than 40 years ☐

Monthly income: No personal income ☐, Rs. 10,000 – Rs. 20,000 ☐, Rs. 20,000 – Rs. 30,000 ☐, More than Rs. 30,000 ☐