

UNIT – I
LESSON - 1
MARKETING RESEARCH

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1. MARKETING RESEARCH

1.1 Introduction

Why is it even necessary for companies to use "Marketing research"? The answer to this inquiry will help marketing research students to have a better understanding of why marketing research has evolved. Firstly, the suppliers of products and services need to have information in order to market their products and services more effectively. Secondly, as a company grows the managers of the company find themselves more separated from the final consumers or their products.

Although retailers and service organizations have direct contact with their customers, managers of retail operations often have little knowledge of their customers' attitudes, opinions, and preferences because sales clerks and other store personal do not relay customers' comments to their managers.

1.2 Managers Need Information from their Consumers:

Target market. What is the best target market for the products or services being offered by the organization?

Products/services. How satisfied or dissatisfied is the target market with what is currently available?

Price. How much value does the target market place on the product in question? What products are they willing to substitute for the product in question?

Distribution. What distribution channel is the target market most likely to use when purchasing the product in question?

Promotion. What can the organization say in its advertisements about its product that will appeal to the target market and lead them to consider the organization's product more attractive than those offered by competitors?

1.3 Defining Marketing Research

The American Marketing Association defines marketing research as follows:

Marketing research is the function which links the consumer, customer and public to the marketer through information-information

used to identify and define marketing opportunities and problems; generate, refine, and evaluate marketing actions; monitor marketing performance; and improve understanding of marketing as a process.

Marketing research specifies the information required to address these issues; designs the method for collecting information; manages and implements the data collections process; analyzes the results; and communicates the findings the their implications.

There are five occasions when managers should contribute inputs to the marketing research process or participate in decisions relating to marketing research.

1.3.1 Initiating Research Projects: One of the manager's responsibilities is to initiate marketing research when it is needed, and to do so at the earliest possible opportunity. When initiating market research, a manager should prepare a written statement of the problem or situation and the alternative courses of action being considered.

1.3.2. Specifying Information Needed for Decision-Making: Managers should include detailed descriptions of the information they need to make a decision on each of the alternatives being considered. The final version of the research project will be much more useful to managers if, in the early stages of the project's design, the managers and researchers get together and develop a clear understanding of the information the managers expect from the research.

1.3.3. Evaluating Proposed Research Projects: In order to avoid misunderstanding or poor communications, a manager should require a

written proposal and carefully evaluate it prior to approving it. After such an evaluation, the manager should ask key questions and suggest changes, if needed, prior to approving the proposal, not after the study is underway or after the findings have been reported.

1.3.4. Evaluating Commercial Research Services: The manager should first specify the purpose for obtaining the information and the information needed, and then compare these things with the information that can be obtained from the commercial service.

1.3.5. Accepting or Rejecting Research Findings: It is the manager's responsibility to avoid a decision based on invalid research findings. Once assured, the manager will have confidence in the validity of the research findings and then can incorporate them into the decision-making process.

1.4 Importance of Marketing Research:

Market research assist more than one way, in taking business decisions. Market research is the development of a market for formulating efficient policies for purchasing, production and sales. Research with regard to market factors has great utility in business. It is for a firm to adjust its supply schedule within its projected capacity.

The increasing importance of marketing research can be best judged from the following aspects.

1.4.1. Paradigm Towards National and International Markets: Business executives are compelled to go beyond the local market because of need for expanding operations. This gap between the

executives and markets is fulfilled by timely flow of information from the markets to the business. The marketing research function of maintaining continuous flow of information attains significance in the era of globalisation.

1.4.2. Transition From Consumer Needs to Consumer Wants: There is a manifold increase in consumer's real income. The discretionary expenditure can only be measured with the help of a planned research. These discretionary incomes can be helpful to know that how the consumer spend these on their products rather than on that of the competitors'.

1.4.3. Changing Dimensions From Price Competition to Non-price Competition: Sales force require information regarding effectiveness of marketing tools. These tools which create differences in the minds of consumers regarding competitive products, firms lacking essential information's often are at a competitive disadvantage in relation to other firms in the same industry.

1.5. Nature of Marketing Research:

The nature of marketing research can be better understood in the light of basic marketing process. In order to determine customer needs and to implement marketing strategies a manager needs information's about customers, competitors, and other environmental forces. As marketing managers need better information on how consumers will respond to products or services.

The task of marketing research is to assess the needs and provide relevant, accurate, reliable, feedback. Today's competitive marketing environment and increasing costs are attributed to poor decision making.

1.6. Objectives of Marketing Research:

1. Marketing Research is used to formulate and evaluate marketing plans, policies, programmes and procedures.
2. It is used in reducing marketing costs.
3. Marketing research helps to provide best solution to the marketing problems.
4. Programmes of marketing research provide insurance cover for the survival and growth of the business in a dynamic economy.
5. Marketing research helps for marketing the product in a better way.
6. The main objective of marketing research is to provide feedback to the manufacturers regarding products and service.

Marketing research is helpful to the manufacturer to find out that where are customers, what they want, when they want it, and where, and how much they are willing to pay for it. Marketing research demonstrates how to do a better job of marketing the products and services in a better way.

1.7. Scope of Marketing Research:

Marketing research is the function, which involves systematic search and analysis of information, which can be use for reaching optimal marketing decisions. A summarised version of the scope of the marketing research can be explained as under.

1.7.1. Market Research: The market research consists of analysis of market potentials for existing products and estimating demand for the products and services. It studies sales forecasting products markets and market trends.

1.7.2. Product Research: Product research involves the gathering of information about customer needs. The areas of product research can be as under:

- Evaluate the performance of the product.
- To carry research on consumers.
- To research on the development of new products.

1.7.3. Price Research: Pricing research is concerned with consumer's ability to pay for the products and services. The area of price research is to

- Ascertaining suitable pricing policies for the product or services.
- To study the pricing policies and strategies.
- To examine alternative price strategies.

1.7.4. Place Research: it is concerned with the logistics or the physical distribution of products. The areas of place research is to

- To study and evaluate the existing and potential channels
- To determine needs and requirements of the dealers.
- To analysis the distribution mix.

1.7.5. Promotion Research: The promotion research is carried out to know past trends, present performance and future plans in connection with the promotional policies of the company. It includes advertising

research sales promotion media research etc. The area of promotion research is to identify the consumer's psychology as to motivate them and to measure advertising effectiveness.

1.7.6. Corporate Research: Corporate research involves an assessment of company activities, association of company and company's dimensions. These types of studies should be periodically carried out.

1.8. The Marketing Research Process:

Whenever managers feel uncertain about making a decision, they may decide to gather additional information that will reduce uncertainty. To help acquire valid and reliable information, they are likely to use a series of steps referred to collectively as the marketing research process.

Steps in Designing a Research Project:

We can view the marketing research process as consisting of the following seven steps:

1. Specifying research objectives.
2. Preparing a list of the needed information.
3. Designing the data collection project.
4. Selecting a sample type.
5. Determining sample size.
6. Organizing and carrying out the fieldwork.
7. Analyzing the collected data and reporting the findings.

1.8.1. Specifying Research Objectives: In this step of the research process researchers must first obtain answers to the questions, "What is

the purpose of this study?" and "what are the objectives of the research?"

Although researchers have little chance of identifying such a decision model without the manager's cooperation and participation, they can contribute substantially to its formulation. The research objectives will become more precisely defined and this will enhance the utility of the research.

1.8.2. Preparing a List of the Needed Information: After a satisfactory statement of objectives established, it is necessary to prepare a list of the information needed to attain the objectives. The main contents are determined on objectives of the research basis.

1.8.3. Designing the Data-Collection Project: After the research objectives have been specified and the list of needed information has been prepared the researcher should determine whether such information is already available in company's sources.

If the needed informations are not available from secondary sources, it will be necessary to design a data-collection project.

The following issues are addressed:

- A. Should the research be exploratory or conclusive?
- B. Who should be interviewed and how?
- C. Should only a few cases be studied, or should a large sample be used?
- D. How will experiments be incorporated in the research?
- E. How should the data-collection form be designed?

1.8.4. Selecting A Sample Type:

Almost all-marketing research projects are interested in information about a large population. As it is impractical to collect data from such large populations only a sample is selected. Various types of samples can be classified into two general categories-Non-probability and probability. The researcher must then decide on the type of sample which is to be selected. Probability methods use a procedure that ensures that each member in the group from which the sample is to be drawn has a known probability of being chosen. Non-probability samples can be selected in a variety of ways, but none of them assures that each member of the population has a known probability of being selected. Non-probability sampling techniques have a greater chance of bias than probability sampling techniques.

1.8.5. Determining Sample Size:

The researcher must also decide how large a sample to select. The researcher must consider the problem at hand, the budget, and the accuracy needed in the data before the question of sample size can be answered.

1.8.6. Organizing the Fieldwork: The methods used in the field are very important, for they usually involve a substantial part of the research budget and are a potential source of error. Fieldwork methods are dictated largely by the method of collecting data, the sampling requirements, and the kind of information that must be obtained.

1.8.7. Analyzing the Collected Data and Reporting the Findings:

After all interviews and/or observations have been made, the completed data-collection forms must be processed in a way that will yield the information the project was designed to obtain. The tabulation and analysis function is guided by the needed information identified in the second step of the marketing research process. The reporting of research findings represents the end product of the research process. The type of report will vary greatly depending on the nature of the project and the audience for which it is prepared.

1.9. Summary:

Marketing research can be defined as the application of the scientific method to marketing problems. In general, this means the application of valid and reliable research methods. Emphasis has been given to maintain objectivity on the part of the investigator and emphasizing accuracy in measurement making investigations. Each of the above represent a different type of research situation. The objectives of the research are different in each case, as is the information needed from the research. Consequently, the type of research used in each situation is also different.

1.10 Self Assessment Questions

1. Define Marketing Research. Discuss in brief the nature and scope of Marketing Research.
2. Explain various steps involved in the Marketing Research Process.
3. What are different elements of Marketing Research? Point out its objectives in brief.

1.11 Suggested Readings

1. Boyd, Westfall and Stasch : Marketing Research
2. Green, Tull and Albaum : Research Decisions
3. Luck and Rubin : Marketing Research

UNIT – II
LESSON - 2
PROBLEM IDENTIFICATION AND
RESEARCH DESIGN

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1.1 Types of Research

Despite the difficulty of establishing an entirely satisfactory classification system, it is helpful to classify marketing research projects on the basis of the fundamental objectives of the research. Generally two types of research are carried out (1) Exploratory, and (2) Conclusive.

The terms qualitative and quantitative suggest the character of the data and the process by which they are gathered. Exploratory Research seeks to discover new relationships, while Conclusive Research is designed to help executives to make decisions.

These two types of research designs can be subdivided as under :

1.2. Research Design

A research design is a framework used for conducting a market research. It shows the procedures for obtaining the information's needed for conducting marketing research. A good research designing ensure the process reliability of marketing research project. A research design involves the following steps.

1. To define the information needed.
2. To design the phases of research.
3. To specify the measurement procedures.
4. To construct and appropriate strategy for data collection.
5. To specify the sampling process.
6. To carry out data analysis.

1.3. Significance of Research Design

Every research problem is unique in some way or another. The following are the reasons to justify the significance of research design. A research design bridge a gap between the research objectives and what is to be done to realize those objectives. It anticipates the results and the analytical work to convert it to useful findings.

It is extremely useful that the design be put in writing. Further, until and unless the researcher is not able to state the design, it is always thought whether the researcher truly understood what is to be done or why.

A formal design's benefits are particularly appreciated when the researcher is deciding specifically what data are needed. It is even more serious to have overlooked some data that are vital and which may not be discovered until the analytical stage.

	Exploratory Research		Conclusive Research
a.	Search of secondary data	a.	Descriptive research
b.	Survey of knowledgeable persons		1. Case study
c.	Case study		2. Statistical study
		b.	Experimentation

1.4. Exploratory Research

The hypotheses usually are drawn from ideas developed in previous research studies. Hypotheses are tentative answers to questions that serve as guides for most research projects.

However, about consumer reaction to marketing stimuli to permit the formulation of sound hypotheses in many specific situations. As a result, marketing research is of an exploratory nature more. Exploratory research is useful to find the most likely alternatives, which are then turned into hypotheses. Exploratory research may also be involved when the perceived problem is much less general. Exploratory research is useful to develop the most promising hypotheses. A research designs applicable to exploratory studies are different from those of conclusive studies. It is therefore necessary to have the firm objectives firmly in mind while designing the research. Further more while it is a hypotheses, exploratory designs are appropriate; when hypotheses have been established and are to be tested, conclusive designs are required or needed. It should be noted that exploratory research may define hypotheses, which are tested by conclusive research; but

a by-product of the conclusive research may be a suggestion of a new opportunity or a new difficulty.

As the number of possible problems may be very large and it may be impractical to find and study each of them.. Exploratory research is useful, to find the most likely alternatives, which are then turned into hypotheses. Exploratory research may also be involved when the perceived problem is much less general. Exploratory research is useful to develop the most promising hypotheses. A research designs applicable to exploratory studies are different from those of conclusive studies. It is therefore necessary that the firm objectives are firmly in mind while designing the research. further more while it is a researching for hypotheses, exploratory designs are appropriate, when hypotheses have been established and are to be tested, conclusive designs are required or needed.

It should be noted that exploratory research may define hypotheses, which are tested by conclusive research; but a by-product of the conclusive research may be a suggestion of a new opportunity or a new difficulty.

1.4.1. The Steps in Exploration

Three typical approaches in exploratory research are:

1.4.1.1. The Literature Survey

An exploratory study is concerned with a study in which explicit hypotheses have not yet been formulated. The researcher is to review the available matters developing hypotheses. The researcher has to take stock of these various hypotheses to evaluate their usefulness for further research.

Professional organisations, research groups and voluntary organisations are a constant source of information about unpublished works in their specialized fields.

1.4.1.2 An Experience Survey

Experience surveys is gathering information from knowledgeable thought on the issues relevant to the research problem. Researchers may begin by making a few calls to some experts on this issue. Experience surveys differ from surveys. There is usually no formal attempt to ensure that the survey results are representative of any defined, group of subjects. However the useful information's can be gathered with the help of exploratory research.

1.4.1.3. Analysis of insight-Stimulating cases

In an unexplored area of study, an intensive study of some selected cases can yield stimulating insights.

The types of people who provide insight-stimulating information could include the following:

- Newcomers to the scene.
- Marginal Individuals are placed on the margin between contending groups.
- Individuals in transition.
- Deviants and isolates in a group who hold a different view from the majority.
- 'Pure' cases or cases that should be extreme examples of the conditions under study.
- Those who fit well and those who do not.

- Those who represent different categories in the system.

A review of investigator's own experience attempts to project himself into situation of the subjects he is studying. This involves subjective introspection on the part of the investigator.

1.5. Research Design of Exploratory Studies

The objective of an exploratory study is to find new hypotheses, flexibility and ingenuity characterize the investigation. As they proceed with the investigation, researchers must be on the alert to recognize new ideas. They can then swing their search in the new direction until they have exhausted it or have found a better idea.

The imagination of the researcher is the key factor and focuses on the following points (1) study of secondary sources of information; (2) survey of individual who are apt to have ideas on the general subject; and (3) analysis of selected cases.

1.6. Conclusive Research

Conclusive research is used for testing the hypothesis generated by exploratory research.

1.6.1. Descriptive Research

A descriptive study is used when marketers want to understand the characteristics underlying a particular problems. Marketing research involves descriptive studies. Marketing researchers conduct surveys of consumer's education, occupation, or age. The information obtained from the survey could be used to develop a restaurant that would satisfy the students.

The procedures to be used in descriptive study must be carefully planned.

The research design for these studies must make provision for protection

against bias. Considerations of economy and protection against bias permeate every stage of the research process. It is necessary to formally define the concepts entering into the question and also to indicate how the concept is to be measured. Considerations of economy must be entertained at the stage of specifying the research question.

1.6.2. Study of Secondary Data

The quickest and most economical way for researchers to find possible hypotheses is to take advantage of the work of others and utilize their own earlier efforts. Trade association sales data; and company records, are kept and used for accounting and sales analysis and for other fruitful sources. In a short time, now a researchers can scan a large volume of published and unpublished data. A large food manufacturer furnishes an example to exploratory research based on study of secondary data.

Descriptive studies implies and designed to describe something. The characteristics of users of a given product; the degree to which product use varies with income, age, sex, or other characteristics; or the number. A majority of marketing research studies are of this type. Descriptive studies in which there is no clear hypothesis, are more exploratory than they are conclusive. If such studies are conducted as exploratory projects, equal or better information's can usually be obtained at minimum cost.

The descriptive studies vary in the degree to which a specific hypothesis is the guide. In such studies, it is usually assumed that the objective is find the market segment that buys the product most heavily so that sales efforts could be managed on that segment.

1.7. Importance of Design in Descriptive Studies

Descriptive studies differ from exploratory studies with which they are designed. Exploratory studies are characterized by flexibility, while descriptive studies attempt to obtain a complete and accurate description of a situation. Formal design is required to ensure that the description covers all phases desired. Precise statement of the problem indicates what information is required. The study must then be designed to provide for the collection of this information.

Formal design is also required for collection of unnecessary data.

Descriptive data are commonly used as direct bases for marketing decisions. After analyzing the data, the investigators attempt to predict the result of certain actions. Descriptive data, however, do not show direct cause and effect relationships. Therefore a careful design of descriptive studies is necessary, to ensure complete description of the situation, to ensure minimum bias in the collection of data, to hold costs to a minimum.

1.8. Types of Descriptive Studies

To facilitate the discussion on the design of descriptive studies, two types, of study are considered separately—the case method and the statistical method.

1.8.1. Case Method

Case studies are more appropriate to exploratory research than the descriptive research. They are not widely used in descriptive research and be used more than they have been in the past. When the case method is used in exploratory research. The purpose is to discover new ideas which further is tested by research. The distinction between the case method in exploratory

research and the case method in descriptive research, is largely a distinction based on the inanity of the results. In descriptive research, the procedure may be more formalized, so that the points to be investigated are definitely known.

1.8.2. Statistical Method

The statistical method is the most widely used method in marketing research. The statistical method differs from the case method in the comprehensiveness of the study of number cases study. While the case method involves in-depth study of a few cases. The statistical method involve the study of a few factors in a larger number of cases.

1.9. Use of Statistical Method

More marketing research studies are done by the statistical method than by any other. Sears could obtain information on the age, income, area of the country, city size, occupation, etc., on the families responsible and then could analyze the data to see if the Discover cards were doing better in upper-or lower-income families, older or younger families, and so on.

1.10. Statistical Method Design

If a statistical study were to be purely descriptive—that is, if the objective were to present the situation existing at a particular time. The objective would be to select a sample that would be similar to the entire population of interest. Description for its own sake is rarely the objective of a marketing research study. From the descriptive statistics researchers hope to gain ideas about cause-and effect relationships that will provide help in planning marketing programs. One disadvantage of the statistical method is its inability to prove cause and effect relationships. Thus the statistical

method may suggest cause and effect relationships, but it can not be used to prove them in the way the experimental method can be used. An additional problem is that the direction of the causal effect is not always clear in statistical studies. Where advertising and sales are found to vary together.

Experiments are much more effective than descriptive techniques in establishing cause-and-effect relationships; the collection of data in an experiment is organized in such a way as to permit relatively unambiguous interpretation. Experimentation is given more extensive treatment here than are the other basic types of research design. A second reason for this emphasis is that the design of experiments lends itself more readily to rational analysis and provides an “ideal” against which other research designs can be compared.

1.10.1. Experiment

Experimentation refers to that research process in which one or more variables are manipulated under conditions that permit the collection of data that show the effects, if any, of such variables in unconfused fashion.

Under most circumstances, experiments must create “artificial” situations so that they can obtain the particular data needed and can measure the data accurately. If they can control the factors present in given situation, they can obtain more conclusive evidence of cause-and-effect relationships between any two of them.

1.11 Selected experimental Designs

To begin the discussion of specific experimental designs it is useful to visualize and experiment in an oversimplified form. A plan is developed for controlling conditions pertinent to the experiment so that some experimental

units can be exposed to the experimental variable and the results measured. The following are some of the most common designs of marketing experiments.

1.11.1 “After Only” Design

This is the simplest of all experimental designs; in fact, it should not be called an experiment. The design consists of applying the experimental variable to an experimental group and measuring the dependent variable after, and only after, the application of the experimental variable.

The “after only” design is even weaker with respect to the conclusion that newspaper advertising brought larger results than a similar amount of advertising in other media would have achieved. In spite of the above comments, the “after only” experimental design is often used with new products when the “before” measurement is known to be zero. Except in circumstances of this type of the “after only” design should not be used.

1.11.2. “Before-After” Design

In this design, the experimenters measure the dependent variable before exposing the subjects to the experimental variable and again after exposure to the experimental variable. This design differs from the previous “after only” design in that an explicit measurement is made before the experimental variable is introduced, whereas in the “after only” design before measurement is implicitly estimated on the basis of past experience.

This design is a clear-cut : dependent variable measured. The experimental subjects are exposed to the experimental variable and the dependent variable is measured again. The difference between the two measures is the result of exposure to the advertising.

1.11.3. “Four-Group-Six Study” Design

As shown above, when the investigator obtaining information in an undisguised manner directly from persons, the “before-after with control group” design is inadequate. Both the experimental and control groups are apt to be influenced, and in different ways, by the “before” measurement. To overcome these difficulties, a “four-group—six study” design is established as the ideal where there is interaction between the respondent and the questioning process. This design helps the researchers measure the size of the “interaction” effect.

This “four-group-six study” design may be taken as a model for marketing experiments in which data are collected from individuals in such a way that they realize it is being done. The design, however, has little practical value. The expenses of selecting four groups in such a way as to insure they are groups make this design impractical for most marketing studies.

In the “four-group-six study” design it is possible to determine the effect of the experimental variable from only two groups—experimental groups 2 and control group 2. Since the “before” measurement in both these cases was inferred, it would be the same in both instances. Therefore, the effect of the experimental variable can be determined simply by computing the difference between the “after” measurements for the two groups. On one basis, the “after only” design is at a disadvantage relative to the “before-after” design. The “before-after” design permits an analysis of the process of change, whereas the “after only” design does not. Thus, individual respondents can be identified and their reactions noted in a “before-after”

study. For example, in an attitude and opinion study one can measure the effect of the experimental variable on those people who have favourable attitudes as contrasted with those who had unfavourable attitudes in the “before” measurement.

1.11.4. Ex-Post Facto Design

One variation of the “after only” design is called the ex-post facto design. This differs from the “after only” design because the experimental and control group are selected after the experimental variable is introduced instead of before. It should be noted that the ex-post facto design is the same as the statistical, cross-classification type of study discussed earlier in this chapter. For example, families under study might be classified into two classes—those with cable television and those without.

1.11.5. Continuous Diary Panel Design

In most marketing research experiments, the subjects are selected by some sampling procedure. In some instances, however, a sample is selected and information is obtained from the members continuously or at intervals over a period of time. A permanent or fixed sample of this type is called a panel. Panels are used for both exploratory and conclusive studies.

Any of the measurements can be considered “before” measurements for the introduction of experimental variables thereafter. Similarly, any measurement can be used as an “after” measurement for preceding variables. Better experimental design is achieved with panel data if the data are looked at as a time series—numerous measurements are made both before and after the introduction of the experimental variable. Trends can then be established as a base from which to measure the effect of the experimental variable. The

practice of hunting through past panel data to find a time when sales changed and then attempting to find some casual factor that changed at the same time can not be considered experimentation.

1.11.6. Factorial Designs

In the experimental designs that have been discussed, a single experimental variable with usually only one “level” was considered. It is possible to test several “levels” of the experimental variable—for example, several different ads could be tested, each with a separate experimental group. Factorial designs permit the experimenter to test two or more variables at the same time and not only to determine the main effects of each of the variables, but also to measure the interaction effects of the variables.

1.12. Problems in Marketing Experimentation

Experimental studies were rare in marketing before 1950. Since then the number of experiments has grown steadily and at an increasing rate. While the number of experiments is still small as a percentage of all marketing research projects, the advantages of experiments in determining cause and effect are so strong that one is safe in predicting continued expansion in their use.

1.12.1. Lack of Theoretical Base

True experimentation can not take place without hypotheses to test. Marketing research of the past has been primarily descriptive; as a result, extensive information on markets and marketing methods is now available. The researcher should develop more useful hypotheses and, thus, will be able to conduct more experiments.

1.12.2. Time factors

Individual markets vary from one time to another; and the same is true, of course, with people. Preferences and motivations change from year to year or even day to day. Sales tests must be given a considerable time period if complete results are to be obtained. Experiments should cover long enough periods to enable the “after” measurements to include more, or all, of the effects of the variables.

1.12.3. Cost of Experimentation

In most cases, at least one control group will be required in addition to the experimental group. Thus, the cost of an experiment tends to be greater than the cost of a descriptive study.

1.12.4. Administrative Problems of Experimentation

Many administrative problems are encountered in conducting experiments. Frequently, cooperation must be obtained and maintained from individuals who find this interferes with their normal work, or who are at least aware that “something different” is going on. Competitive circumstances may create difficult experimental conditions. Experiments are more open to observation by competitors than are “one shot” surveys.

1.13. Summary

The conclusive research requires more formal design than exploratory research. The most used type of conclusive research design is the descriptive design. These designs provide a description of a specific situation in such a way as to help the researcher to identify cause and effect relationships. The case method and the statistical method are two descriptive designs.

Further the experiments have a basic advantage over descriptive studies—they are less apt to be useless. The researcher must develop and

hypothesis. This forces researchers to state specifically what cause and effect they expect to find. Experimental results, therefore, are more likely to relate to a specific decision that must be made than are descriptive data. In many marketing situations, the alternatives from which a choice must be made can be tested at a relatively small cost. Experiments are particularly useful for this purpose.

1.14. Self Assessment Questions

1. Define Research Design. Discuss in brief the significance of Research Design.
2. What is the importance of research design in descriptive studies?
3. What are different statistical methods used in research design?
4. Define Exploratory Research. Discuss in brief various steps involved in exploration.

1.15. Suggested Readings

1. Boyd, Westfall and Stasch : Marketing Research
2. Green, Tull and Albaum : Research Decisions
3. Luck and Rubin : Marketing Research

UNIT – III

LESSON - 3

PLANNING AND EXECUTION

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1.1 Questionnaire : An Introduction

When information is collected by asking questions from people who may have the desired data, a standardized form called a questionnaire. The questionnaire is a list of questions to be asked from the respondents. Each

question is worded exactly as it is to be asked, and the questions are listed in an established sequence. Spaces in which to record answers are provided in questionnaires except in the case of telephone interviews. All that is necessary is to write down the questions to be asked and have them printed on sheets of paper. Unfortunately the problem is deceptive. If one question is asked before another, it might get a different answer than if it is asked after the other. If some questions are asked, respondents may refuse to answer them at all. On the other hand, respondents might knowingly answer other questions in-correctly. Questionnaires are the measuring instruments used in marketing research. If they are to produce useful measurements, they must be both valid and reliable. In one public opinion survey, the following question was asked with the results shown: As the above discussion indicates, the questionnaire can be the source of many errors in a survey, probably more errors than other aspects of survey research. These errors can be summarized under the following headings;

Memory – the respondent can't remember the incident or remembers incorrectly.

Motivation – the respondent may be motivated to report incorrectly to provide a better image of himself.

Communication – the respondent simply may not understand accurately what he is asked.

Knowledge – the respondent simply may not know the answer.

In constructing a questionnaire it is wise to keep these four points in mind at each step of the process.

1.2. Questionnaire Construction Procedure

Questionnaire construction is still much more of an art than a science. Most of what is known about making questionnaires is the result of general experience. Neither a basic theory nor even a fully systematized approach to the problem has been developed. The extensive experience of researchers have led to a considerable understanding of the problem and to a long list of “dos and don’ts” and rules of thumb to design questionnaire these can help a beginning researcher to avoid many pitfalls. They cannot be substituted for creative imagination in designing a questionnaire. In the following discussion the generally accepted rules are organized to provide a step-by-step approach to the development of a questionnaire.

Questionnaire designing can be discussed in nine steps. These steps may vary in importance in individual projects. The nine steps are:

- (1) To decide what information is wanted;
- (2) To decide what type of questionnaire to be used
- (3) To decide on the content of individual questions;
- (4) To decide on the type of question to use;
- (5) To decide on wording of the questions;
- (6) To decide on questions the sequence of the ;
- (7) To determine form, layout and method of questionnaire reproduction;
- (8) To make a preliminary draft and pretest questionnaire.
- (9) To revise and prepare the final questionnaire.

1.2.1. To Determine What Information is Wanted

A questionnaire should serve two functions:

- (1) It should translate research objective into specific questions the respondent can answer, and
- (2) It should motivate the respondent to cooperate to furnish the information correctly. Therefore before signing a questionnaire is formulated, a specific statement of the information needed should be made. The complete analysis should be anticipated. The questionnaire framer should develop a series of questions that would elicit the information needed for the proposed analysis. It is emphasized that a questionnaire cannot be formulated until the précis information sought is known.

1.2.2. To Determine the Types of Questionnaire to Use

Questionnaires can be used by personal interview mail, or telephone. The choice among these alternatives is largely determined by the type of information to be obtained and by the type of respondents from whom it is to be obtained. It is necessary to decide what type of questions are to be asked, and the way in which they are asked, and finally the sequence in which they are asked.

1.2.3. To Determine the Content of Individual Questions

Once the needed information is specified and the method of communication is decided. The researchers is to formula the questionnaire. A researches is to decide that what to include in individual questions. The following points should be cared to check possible questions; obviously, to determine whether a question is necessary, the researcher must turn back to the objectives of the study. Is the information definitely called for? Will

something actually be done as a result of the information obtained? If the answer to either of these is no, the question should be eliminated.

1.2.4. Does the Respondent Have the Information Requested ?

Several aspects the researchers should consider in planning their questions. These are discussed in following questions

1.3. Can the Respondent Remember the Information ?

Researchers can control the length of time between an event and the date of their questioning only by limiting their questions to events that have happened recently. Ability to remember is influenced by the stimulus that calls for the remembering. The considerable advantage of aided recall that comes with stimuli to the respondent's memory is, at least partially, offset by the bias resulting from the suggestions offered by each such stimulus.

1.3.1. Will the Respondent Have to Do a Lot of Work to Get the Information? Will Respondents Give the Information?

Even though they know the answer, respondents will sometimes not answer questions. There are two reasons for this: (1) they are unable to phrase their answers, or (2) they do not want to answer. (3) The question may be included in a group of others that are more in-nocuous and the whole list asked quickly. (4) The interviewer may make a statement indicating that the behavior in question is not unusual and then ask the specific question of the respondents. (5) The question may be phrased to refer to "other people." (6) A special ballot may be provided that respondents can complete personally and drop in a sealed box. (7) Another approach that can be used in personal interviews is that of

handing respondents cards with alternatives listed and identified by letters or numbers.

1.3.2. Are Several Questions Needed Instead of One?

Some questions may have two or more elements. If these are left in one question, interpretation of the answers becomes impossible. Useful comparisons might be obtained if the question were changed into separate question : 1. What do you like about Era as compared to other detergents? 2.How did you first happen to use Era? Almost any “why” question about the use of product involves these two elements : (1) attributes of the product and (2) influences leading to knowledge of it.

1.4. Type of Question to Use

Once the content of individual question is decided, researchers are ready to begin forming the actual questions. The three main types of questions from least structured to most structured are (1) open (2) multiple-choice, and (3) dichotomous.

1.4.1. Open Questions.

What industries are your best potential markets for hydraulic equipment? How many families occupy this home? How long have you had this piano? Why do you smoke Marlboro cigarettes? Each of these is an example of an open, or free-answer question. Respondents are free to answer in their own words and express any ideas that they think pertinent. Open question influence the answers obtained less than multiple choice or dichotomous questions. As the open question suggests no answers the variety of answers obtained is often extreme. The researcher could list a number of the answers that would be forthcoming. Thus the open question

is particularly useful in exploratory research where new ideas and relationships are sought. For some questions answers may run several sentences or more in length. If generalizations are to be drawn from such answers, some way must be found for summarizing them. This is usually done by having an editor read some or all of the answers and establish classifications. An excellent study of the open question had concluded:

1. Average response to open questions is three times as long as to closed questions.
2. The meaningful, relevant, nonrepetitive response occurs no more often in open than in closed questions.
3. Pertinence of responses is the same in both types of questions.
4. Factual reporting is less accurate in open questions.
5. Open questions get less valid responses on subjective topics.
6. Self-revelation is greater on factual topics but less on attitudinal topics when open questions are used. It is important to keep in mind that carefully constructed questions do obtain the same results when asked in both open and closed forms. No generalizations about which form obtains the more accurate results or what types of data are best obtained.

1.4.2. Multiple-Choice Questions.

Questions of this type offer respondents a number of specific alternatives from which they are to choose one or more as the case may be. Which of the following reasons do you think explain your patronage of this service station?

- More often occasionally ----not all

- It's closest to my home-----
- It's clean and attractive -----
- It's sells the gasoline brand I prefer -----
- It's prices are lower-----

Notice in each case the alternatives are actually repeated to the respondent. If the second question were asked without actually mentioning the alternatives, it would be an open question rather than a multiple choice.

Multiple-choice question overcome some of the disadvantages of open questions but incur some new ones. Open questions are subject to interviewer bias in the recording of answers. Thus the multiple choice question is faster and less subject to bias in the interview.

Similarly, the multiple choice question simplifies the tabulating process. The difficult and time consuming editing process is reduced to a rapid check for mechanical accuracy.

When the alternatives in a multiple-choice question are numbers, this bias of position changes. Central positions are chosen more than either extreme. An effort should be made to have a class at each end that is more extreme than any respondent is apt to report. This will enable all respondents to report accurately without being in an extreme category.

1.4.3. Dichotomous Questions.

The dichotomous is an ex-treme of the multiple choice question. Is any of this discount normally passed on to others? Did you buy it or was it a gift?

As the two questions ask exactly the same thing – one in a positive way and one in a negative way – the answers should be directly comparable. Dichotomous questions have about the same advantage as multiple –choice questions. They are easy for an interviewer to handle. Editing and tabulation are simple. They offer less opportunity for interviewer bias. It is easy for the respondent to reply. Few dichotomous questions, are actually only two-way. Dichotomous questions may be more than two-way questions for another reason-instead of one or the other of the two alternatives the correct answer may be both.

Researchers must consider the advantages and disadvantages of which type to use for each question in the survey. In general, the expense of editing open questions militates against their use if it is at all possible to avoid them. If a multiple-choice question is used, all alternative should be stated and should be mutually exclusive.

If dichotomous questions are used, they must actually be two-way questions. If qualified answers or combination answers are possible, space should be left for recording them and also for a “don’t know” answer.

1.5. Decide on Wording of Questions

A number of other important ideas, however, should be considered. On question wordy unfortunately, these ideas are more rules of thumb that have been developed from experience than they are underlying concepts.

1.5.1. Define the Issue.

This can also serve as a guide to the researcher preparing a questionnaire. Each question should be checked to be sure that the issue is

clear. Who, where and when are particularly important. The why and how may be applicable in some questions.

1.5.2. Should the Question Be Subjective or Objective?

Many questions can be stated in either subjective or objective form. Researchers have no available rules to follow in deciding whether to make their questions subjective or objective. They must be aware, however, of the fact that the choice will influence their results.

1.5.3. Positive or Negative Statement.

In a survey to determine the attitudes of executives towards advertising each question was worded in two different ways – one positively and one negatively. Several issues were presented in the question, and respondents were to indicate one of five alternative reactions to each statement. Strongly agree partially agree can't say, disagree and disagree pre-sumably one who agreed with a favorable statement of one issue would disagree with an unfavorable statement of the same issue.

This study used positive and negative statements alternately to average out the effect of each wording.

1.5.4. Use Simple Words.

Words used in questionnaires should be simple words with meaning known by everyone. It is not in the dictionary, and even other meanings among certain groups of the population or in certain sections of the country.

1.5.5. Avoid Ambiguous Questions.

Ambiguous questions mean different things to different people. Naturally, comparable replies cannot be received from respondents who take a question to mean different things.

Questions that use such terms as usually normally frequently and regularly are ambiguous: the last brand smoked by some respondents will be different from the one they usually smoke but if the sample is adequate, this will average out.

1.5.6. Avoid Leading Questions.

In a study to evaluate the service of automobile insurance companies a series of questions on claim service was preceded by a statement that began as follows. It is obvious that this statement would influence the answers to the questions on claim service that followed. Most marketing research studies do not have the obvious bias of the above, but it is easy to lead respondents toward one answer unless care is taken not to do so. A study of the individual questionnaires, however showed that many of the respondents had associated the survey with that station, apparently through the address to which the questionnaire was mailed.

1.5.7. Do Not Ask Questions in a way that Will Involve Generalization.

Questions should always be stated in specific terms. If generalizations are desired, the researcher should make them from the specific data obtained.

1.5.8. “Cushion” Questions That May Seem Unreasonable to the Respondent.

In many marketing research projects it is desirable to know the income of the respondent so that comparisons can be made among income groups. Consumer surveys have become commonplace enough in recent years that difficulties of the above type may be less important than in the past.

1.5.9. Use “Split Ballot” Wherever Possible.

It is important for the researcher to realize this situation exists and to understand what effect a particular phrasing may have on the results. To do this the “split ballot” technique can be used. Halves of the questionnaires will permit a better interpretation of the results than would be possible were only one wording used.

1.6. Decide on Question Sequence

Once the wording of the individual questions has been determined, it is necessary to set them up in some order. The sequence can influence the results obtained.

A questionnaire has three major sections: (1) basic information (2) classification information, and (3) identification information.

1.6.1. Opening Questions should be Respondent’s Interest.

The questionnaire must capture the interest of the respondents at once or they may break off the interview. Therefore, the first question should be an interesting one, the respondents opinions are good starters. It is also important to make the first few questions simple questions that everyone will be able to answer easily. This builds the confidence of respondents.

1.6.2. Place Questions Apt to Cause Difficulty

Questions that might embarrass respondents and those that may have little interest for respondents should be well down in the questionnaire. After respondents have answered a number of questions they are more at ease with the interview.

1.6.3. Consider Influence of Questions on Succeeding Questions.

It is necessary to mention the product specifically in some questions, those questions should be left to the end of the questionnaire.

1.6.4. Arrange Questions in Logical Order.

Questions should follow one another in some logical order- that is logical to respondents. A useful way to develop the best question sequence is to put each question on a card so they can be sorted easily.

1.6.5. Mail Questionnaire a Special Problem.

It is particularly important that the opening questions should be of the respondent's interest. They should not be open questions that require much writing. Questions that are at the end to avoid biasing the answers to other questions will still bias the others because respondents can go back and change their responses to earlier questions.

1.7. Pre-code Questionnaire.

After personal and mail interviews however, the information must be transferred from the questionnaire to the computer. To speed this process questionnaires are precoded-that is, the codes that will be entered in the computer are printed on the questionnaire so that when a respondent checks an answer.

1.7.1. Decide on Layout and Reproduction

The physical layout and reproduction of a questionnaire can influence its success with respondents and can affect the problems encountered in handling it three – points should be considered in planning the questionnaire securing acceptance making it easy to control making it easy to handle.

1.7.2. Securing Acceptance.

The physical appearance of a questionnaire influences the attitude of the respondent toward a mail or personal interview survey. The name of the firm sponsoring the project and the name of the project should appear at the top of the first page or on the cover if the questionnaire is in book form.

1.7.3. Ease of Control.

To make it possible to control the questionnaire in the field operation and in the editing and tabulating procedures the questionnaires should be numbered serially. This enables the research director to verify that all questionnaires are accounted for or to determine which ones are lost. Mail questionnaires are an exception.

Similarly, the questions on the questionnaire should be numbered serially. This makes reference to individual questions more simple and speeds up editing and tabulating.

1.7.4. Ease of Handling

Proper reproduction of a questionnaire can facilitate the fieldwork and the office work on surveys. When interviewers have to crowd answers into

small spaces, it is frequently hard to read the answers and tabulation errors appear.

By showing the proper question sequence as a flow diagram on the questionnaire the designer can help the interviewer move through the questionnaire quickly and accurately.

1.8. Pretest

Before the questionnaire is ready for the field, it needs to be pretested under field conditions. No researcher can prepare a questionnaire so good that improvements cannot be discovered in field tests. One pretest is as much, however, as most questionnaires get.

Pretests are best done by personal interview, even if the survey is to be handled by mail or telephone. Interviewers can note respondent reactions and attitudes.

1.9 Method of Collecting Data

Marketing programs are based on marketing executives' perceptions of consumer attitudes towards their products, what attitudes they would like consumers to have, and how they can change existing consumer attitudes to the latter.

Most of the strategy of market segmentation is based on attitudinal segmentation. Attitude measurement is also a key factor in the increased efforts to measure the effectiveness of advertising. To measure the effectiveness of advertising, it is necessary to measure changes in attitudes that may be caused by the advertising.

If the predisposition is favourable, it is assumed that this means the consumer is more likely to purchase the item.

It is clear that attitudes are complex and not fully understood. It is believed that attitudes can be changed, but that they tend to be persistent. Strongly held attitudes can be changed only with great pressure. Attitude measurement in marketing tends to focus on measurement of beliefs about a product's qualities and the emotional feelings about those qualities.

1.9.1. Questionnaire Methods

1. Self-reports—individuals are asked to report on their own attitudes.
2. Verbal reaction to partially structured situations—individuals are shown pictures of the product in use or in some setting and are asked to comment.
3. Performance on objective tasks—individuals are asked to report on factual matters and their attitudes are inferred from their knowledge about products.

1.9.2. Observation Methods

1. Overt actions—individuals are given opportunities to select items they prefer.
2. Physiological reactions—when individuals are exposed to the item in question, sweating in the hand, dilation of the eye, or change of voice pitch is measured.

1.9.3. Depth Interviews

Depth interviews are the most commonly used techniques that makes no attempt to disguise the subject of interest and uses no structural framework for eliciting information. To be effective, depth interviews must be conducted by highly trained interviewers, often individuals with training in psychology.

1.9.4. Focus-Group Interviews

In principle, focus-group interviewing is the same as depth interviewing except that groups are interviewed at one time.

Focus groups have become a major tool of the market researchers, especially in exploratory research.

1.9.5. Disguised, Non-structured Techniques

Many people are unable to provide investigators with insight into their conscious or unconscious attitudes. Disguised methods, usually referred to as projective techniques, have been developed to overcome this problems. In doing so, it is believed that respondents reveal elements of their attitudes that they would not reveal in response to direct questions.

1.9.6. Word Association

Word association is one of the oldest and simplest projective techniques. Respondents are presented with a number of different words, one at a time. After each word they are asked to give the first word that comes to mind. If the list of words presented is related to the subject of interest, respondents may indicate some of their attitudes toward the subject with their responses.

1.9.7. Sentence Completion

In this technique respondents are presented with a number of incomplete sentences and asked to complete them. The respondents are asked to complete the sentence with the first thought that comes to mind. Sentence completion tests provide more information about the subject's feelings than word association; but they are not as disguised, and many respondents are able to diagnose the investigator's purpose.

1.9.8. Story Completion

The story technique provides respondents with part of a story—enough to center attention upon a particular issue, but not enough to indicate the ending. Respondents are then asked to give the conclusion in their own words.

1.9.9. Pictorial Techniques

The pictorial techniques are similar to storytelling except that pictures are used as the stimuli. The two main pictorial techniques are (1) Thematic Apperception Test and (2) cartoons.

1.9.10. Thematic Apperception Tests

They consist of ambiguous pictures about which the respondent is asked to tell a story. The researcher may ask a number of questions to stimulate thinking. It is assumed that the response tells something about the respondent.

In preparing cartoon tests, the researcher must be careful to use situations into which respondents can project themselves easily. That is, the picture must present a situation familiar to the respondent—one with which the respondent can identify.

1.10. Non-disguised, Structured Techniques

The non-structured techniques for attitude measurement are primarily of value in exploratory studies, where the researcher is looking for the salient attributes of given products and the important factors surrounding purchase decisions as seen by the consumer. Structured techniques can provide a more objective measurement system, one which is more comparable to a scale or a yardstick.

To simplify the process for the respondents, these alternatives may be specified so that they can check the ones that describe themselves. Three variations of such self-rating scales—the graphic rating scale, the ranking process, and multiple item scales—are discussed here.

1.10.1 Graphic Rating Scales

The most widely used scale in marketing research is that in which respondents are asked to rate themselves, a product, or a concept by checking the point at which they or the item would fall on a scale running from one extreme of the attitude in question to the other.

1.10.2. Semantic Differential

A special type of graphic rating scale, the semantic differential, has come to be used widely in marketing research. It permits the development of descriptive profiles that facilitate comparison of competitive items.

Respondents are given a group of these scales and asked to check on each one the point that indicates their opinion of the subject in question. As originally developed, each scale consisted of two opposing adjectives, such as good/bad and clean/dirty.

Semantic differential scales can be used to obtain total attitude scores. Pairs of adjectives must be selected that are relevant to the attitude to be measured. When the semantic scale is prepared to develop an image profile, it provides a good basis for comparing images of two or more items. It is best when used for image-descriptive purposes and is not recommended for overall attitude measurement. The one big advantage of the semantic differential is its simplicity.

Rankings of this sort separate the items in the group studied, but of course give no absolute rating—all the items could be considered good or bad.

1.10.3. Multiple Item Scale

Attitudes are composed of many elements. To provide one such summary measurement, multi-item scales have been developed. Two of the best known are the Thurstone and Likert scales.

The basic premise underlying such tests is that respondents will reveal their attitudes by the extent to which their answers to objective questions vary from the correct answers. Respondents are provided with questions that they are not likely to be able to answer correctly. Thus, they are forced to guess at the answers.

1.11. Multidimensional Scaling

The scaling methods enable the researcher to measure to some degree consumer attitudes toward products and brands. In general, they permit one to determine such things as which brand is perceived by consumers to be more economical than another, less glamorous, more old-fashioned, and so on. They are useful in studying questions of the following types:

1. What are the major attributes of a given class of product that consumers perceive in considering the product and by which they compare different brands of the product?
2. Which brands compete most directly with each other? Which the least directly?

3. Would consumers like a new brand with a combination of characteristics not found in the market?
4. What would be the consumer's ideal combination of product attributes?
5. What sales and advertising messages are compatible with consumer brand perceptions?

1.11.1 Consumer Preferences

After the consumer's perception configuration has been developed as suggested above, a next step may be to determine the preferences with regard to the product under study.

1.11.2 Uses of Multidimensional Scaling

There are many possible uses for this method of scaling; new applications are being developed steadily. Some of the uses that have already been identified are the following:

1.11.3 Market Segmentation

If brands are located as points in preference-space, market segments may then be viewed as subspaces in which consumers have similar ideal positions and perceive the brands similarly.

1.11.4 Product Life Cycle

By analyzing respondent perceptions at different times, researchers may be able to relate movement along various dimensions.

1.11.5 Vendor Evaluation

Industrial purchasing agents must choose among vendors who differ—and to determine a specific vendor from whom to purchase would be information that would help vendors design sales strategies.

1.11.6 Advertising Media Selection

Which magazines should be used for an advertising campaign to reach a given audience? This would be similar to the market segmentation process. A similar approach might be taken to locate the best media of specific ads.

1.12. Limitations of Multidimensional Scaling

These limitations can be classified in the following three categories:

1.12.1. Conceptual Problems

Criteria on which similarities are gauged may vary during an interview with respondents; they may vary by the context in which respondents; they may vary by the context in which respondent think, such as purchase for themselves or as a gift; and small variations in one criterion may be more important than large variations in another.

1.12.2. Empirical Problems

In the discussion of the multidimensional scaling process, it was pointed out that the “labeling” of the various dimensions of importance to respondents is subjective and hence, open to question.

1.12.3. Computational Problems

All analyses of the type discusses here require computer programs. Several different ones are used; but it is not known how, if at all, they vary in results according to variation in such inputs as number of points and experimental error.

1.13. Summary

Attitudes are complex and not completely understood. They are a composite of such elements as beliefs, preferences and readiness to

respond behaviorally. Efforts to measure attitudes are not entirely successful in separating these elements and in many cases confuse them.

Measurement of consumer attitudes is a major concern of marketing researchers. The techniques used vary from completely unstructured to highly structured, from disguised to completely open, and from simple and direct to highly complex. Semantic differential is simple in concept and gives results comparable with more complex, one-dimensional methods. As a result, it is widely used. Multidimensional scaling is currently popular and appears to add significantly to the analysis of attitudes.

1.14. Self Assessment Questions

1. What is Questionnaire designing. What are the different steps in preparing good questionnaire ?
2. What are different methods of collecting data?
3. What are Limitations of Multidimensional Scaling

1.15. Suggested Readings

1. Boyd, Westfall and Stasch : Marketing Research
2. Green, Tull and Albaum : Research Decisions
3. Luck and Rubin : Marketing Research

UNIT – III

LESSON - 4

DATA COLLECTION

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1.1. General Accuracy of Data Collected

Surveys have become very commonplace in today's world, and the average person seldom useful information. The formal efforts are made to check the accuracy of survey data, however, the results are often disturbing.

1.1.1. Accuracy of Survey Data

Errors of the above size on factual data are upsetting enough, but they cause one to wonder if errors may be even larger on less factual data, such as attitudes, opinions, and predictions.

1.1.2. Accuracy of Observation Data

In general, observation data are more accurate than questionnaire data, especially when observation of an action can be obtained. The observation does not automatically produce accurate data. The observation situation may be difficult for the observer to see accurately. Significant variations in observation of the same phenomena have been reported for such diverse projects as the state of repair for telephone poles, the transit of stars in a telescope, and the reading of chest X-ray films. From the above it is obvious that data collected by any method are subject to error and must be used with caution.

1.2. Questionnaire Method

Therefore, the common factor to verify should also be on verbal responses to question or oral.

1.2.1. Advantages of Questionnaire Method

1.2.1.1. Versatility. Probably the greatest advantage of the questionnaire method is its versatility. It can be used, however, to get some data relative to most problems.

1.2.1.2. Speed and Cost. Questioning is usually faster and cheaper than observing Interviewers and have more control over their data gathering activities than to do by observers.

Disadvantages of Questionnaire Method

Despite the fact that the questionnaire method is widely used in marketing research it has several important limitations.

1. Unwillingness of Respondent to Provide Information.
2. Inability of Respondent to Provide Information.
3. Influence of Questioning Process.

1.3. Questionnaire Studies Classified by Structure and Disguise

It is possible to classify questionnaire studies on a variety of bases. Three such bases which are of importance are (1) the degree to which the questionnaire is formalized or structured; (2) the disguise or lack of disguise of the objectives of the questionnaire; and (3) the communication method used.

1.3.1. Structured, Non-disguised Questioning

Most questionnaire studies made in marketing research are of the first type they are structured and are not disguised. Each of a selected

group of persons is asked the set of questions in the given sequence. Answers are frequently limited to a list of alternatives which is stated or implied. A structured interview produces more reliable results than unstructured interviews.

1.3.2. Non-structured, Non-disguised Questioning

More than anything else, marketers want to know why people buy or do not buy their products. To overcome these difficulties, researchers have developed depth interviews and focus-group interviews. Instead of approaching respondents with a fixed list of questions, the interviewer attempts to get respondents to talk freely about the subject of interest.

Depth interviews take longer than the typical structured interview. Many of them last an hour or more and so are costly. As a result, group interviews have become the prevalent method of conducting this type of research. A final disadvantage of the non-structured, non-disguised type of questionnaire lies in the difficulty and cost of interpretation.

1.3.3. Non-structured, Disguised Questioning

Many people are either unwilling or unable to give accurate reports as to their own attitudes and motivations. Thus, even focus groups probably give biased results. To overcome this difficulty, clinical psychologists have developed disguised methods of gathering such data.

The theory of projective techniques is that all individuals, in describing a situation, interpret that situation to a degree. Various projective techniques are used, but the most common are word association, sentence completion, and storytelling. Since projective techniques are unstructured, they have much the same limitations as focus groups.

Interpretation is very subjective; hence, it is subject to the criticism that it reflects the interpreter as much as the respondent. The big advantage of projective techniques lies in their ability to uncover subconscious and socially unacceptable attitudes and motives. When consumers were asked why they did not use instant coffee, they said they did not like the taste.

1.3.4. Structured, Disguised Questioning

Questioning of the structured, disguised type has the advantages of disguise that were pointed out above- primarily that respondents do not know what is being measured and, hence, are not biased in their answers.

Some structured, disguised tests of attitudes are based on the theory that individuals' knowledge, perception, and memory are conditioned by their attitudes. Similarly it is theorized that if respondents are asked questions to which they do not know the answers, they will tend to guess in the direction of their own attitudes. Data collected by structured disguised techniques on attitudes toward instant coffee were compared with the similar data collected by non-structured, disguised techniques as described above.

1.4. Questionnaire Studies Classified By Methods

Another classification, which overlaps the preceding one but is useful for illustrating other types of opportunities and problems, is classification on the basis of the method of communication used. Three different methods of communication with questionnaires are available:

- (1) personal interview,
- (2) telephone, and
- (3) mail.

Personal interviews are those in which an interviewer obtains information from respondents in face-to-face meetings. Telephone interviews are similar except that communication between interviewer and respondent is via telephone instead of direct personal contact. In most mail surveys; questionnaires are mailed to respondents who also return them by mail.

For years the bulk of all marketing research studies were conducted by personal interview at the respondent's home. When personal interviews are used, they now occur more often in shopping centers than at home. Telephone and mail interviews are the most widely used, primarily because they tend to be cheaper than the other methods of communication yet give satisfactory results. Personal interviews at home are declining in use.

Questionnaires of the structured type, disguised or non-disguised, can generally be handled by any of the three communication methods; but non-structured interviews cannot be handled by mail and only with some limitations by telephone. Despite of various limitations described above, the important thing to note is that well-conducted surveys tend to produce comparable results no matter what method of communication is used.

1.5. Observational Method

Observation is the second method of collecting data. It is the process of recognizing and noting people objects, and occurrences rather than asking for information. New technology is providing additional ways of observing other customer information to combine with the scanning data described above. Several companies now have consumer panels, each member of which carries a card that identifies him or her. Demographic

data on the customer are in the computer data bank and can then be correlated with purchases.

1.5.1. Advantages and Disadvantages of Observation

If the researcher observes and records events, it is not necessary to rely on the willingness and ability of respondents to report accurately. Furthermore, the biasing effect of interviewers or their phrasing of questions is either eliminated or reduced. Data collected by observation are, therefore more objective and generally more accurate.

Unfortunately, the observational method also has a number of weaknesses that keep it from being more widely used. Researchers have long recognized the merits of observation as opposed to questioning, yet the vast majority of marketing research projects continue to rely on the questionnaire. Probably the most limiting factor in the use of observation is the inability to observe such things as attitudes, motivations, and plans.

Events of more than short-term duration also pose observational problems. Further the eliminates much of the subjective element encountered with questionnaires.

Further more in some observational studies, it is impractical to keep respondents from knowing that they are being observed. Modern technology, however is providing more and more methods for observing by machine with both increased accuracy and decreased labor cost.

1.5.2. Methods of Observation

In the following various combinations of the classifications are considered, along with their advantages and disadvantages.

1.5.2.1. Natural, Direct, Unobtrusive Observation.

Structured direct observation is used when the problem at hand had been formulated precisely enough to enable researchers to define specifically the observations to be made. Unstructured, direct observation is similar to unstructured questioning; observers are placed in situations and observe whatever they deem pertinent. The researchers found two major problems: (1) to get observers to record their observations in detail and (2) to prepare permanent records of observations at the earliest opportunity. Extensive training was necessary to overcome these problems. The second problem above is common to observations where an effort is made to keep the observer unnoticed. Sampling is another problem common to natural observation studies. Case it is necessary to let events happen as they do naturally.

1.5.2.2. Contrived Observation

When researchers rely on natural direct observation they frequently find observers a great deal of waste time while they wait for the desired event to happen. To reduce this problem, it may be desirable to contrive situations so that observations may be made more efficiently.

1.5.2.3. Mechanical Observation

A number of imaginative methods of mechanical observation and devices for making such observations have been developed. Another device for making observations is the psychogalvanometer. This machine measures minute emotional reactions through changes in the rate of perspiration much like a lie detector. The eye-camera is a device to record the movements of the eye. The laser scanners used to read the product

codes in supermarkets are generally believed to be the new development that will have the greatest effect on marketing research in the near future.

1.5.2.4. Indirect Observation

One type of observation however focuses on the physical traces left by the factor of interest. Erosion observations are less frequent in marketing research. Observation of the results of past actions will not bias the data if done on a one-time basis.

1.5.2.5. Observation of Records

Whenever researchers use data collected for an-other purpose, they are employing the observation method in a manner very similar in character to the observation of physical traces.

1.6. Problems and Discussion Questions

1. What kinds of marketing research situations are especially conducive to study by the observation method.
2. Assume you wish to determine whether men are brand conscious when they are shopping for suits. Using the questionnaire method. How could you explain the situation.
3. Describe a situation where you would recommend the use of structured, non-disguised questioning. In each case explain the reasons for your recommendation.
4. which methods of communication are likely to be used with which types of questioning give specific examples of each.

1.7. Summary

If one wishes to find what people think or know, the logical procedure is to ask them. This has led marketing researchers to use the questionnaire technique for collecting data more than any other method.

It is not as easy as it might appear, however, to collect facts or opinions from people accurately. Unless the point of interest has been impressed on respondents minds very recently, they are apt to have trouble remembering it exactly. Another problem is the unwillingness of some people to answer questions from strangers. Interviews can be handled in various ways. The general purpose of the survey can be disclosed to respondents or it can be disguised.

Three methods of communication are used with the questionnaire method – telephone, personal interview, and mail. Each has advantages and limitations. Personal interviews are the most flexible, but also the most costly, so telephone and mail are the most widely used, although personal interviews in shopping malls are growing rapidly.

Theoretically the observational method is superior to the questionnaire method. On the practical side, the advantages are in favor of the questionnaire method and have led to its widespread use. Almost any marketing problem can be approached with the questionnaire, whereas the observational method cannot get data of many types.

1.8. Self Assessment Questions

1. What do you mean by accuracy of data? How important is the accuracy in analyzing the data?
2. What are questionnaire studies classified by structure and disguise?

3. What do you mean by observational method? What are its different types?

1.9. Suggested Readings

1. Boyd, Westfall and Stasch : Marketing Research
2. Green, Tull and Albaum : Research Decisions
3. Luck and Rubin : Marketing Research

UNIT – III

LESSON - 5

TABULATION OF DATA

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1.1. Overview of Tabulation and Analysis

While there are no standardized tabulation and analysis procedures it is quite common for researchers to proceed through the following steps.

1.1.1 Preparing the Raw Data

The data-collection form is edited to assure that the data contained therein are legible and accurate. Then, a number of questions in the questionnaire are categorized and classified in agreement with the items specified on the list of needed information. After these categories are established, each data-collection form is reviewed to identify the consumption of each household and to classify it into one of the three or four selected classes of consumption.

1.1.2 Data Entry

After the data collection forms have all been edited and the responses all placed into the proper classes and categories, the data is entered into the computer.

1.1.3 Tabulation

The computer can be programmed to count the number of responses falling into each response category of any question, and it can even make counts of responses to two or three questions simultaneously.

1.1.4 Determining the Significant Differences Exist Between Categories

Researchers will have to determine if these differences are too large to have occurred by chance as a result of sampling variations and, if so, will conclude that they reflect true differences between the categories.

1.1.5 Explaining “Why” Differences Exist

Researchers who do not attempt to explain the differences may be overlooking important findings. This, in turn, may cause them to draw unwarranted conclusions.

1.1.6 Making Recommendations

After drawing statistical conclusions, the analyst needs to translate them into recommendations. Making recommendations usually requires an understanding of the practical details surrounding a given operation and so may not be responsibility of researchers.

1.2. Preparing the Raw Data

When the fieldwork is completed, researchers have a great deal of data but little or no information. What is needed to transform these data into information is a procedure for organizing and compiling the bits of data contained. Much of the data-tabulation activity consists of counting the number of responses to a specific category of a specific questions. Tabulating is more than just counting.

1.3. Making a Preliminary Check Improves Data Quality

After receiving all questionnaires from the field, a preliminary check is made before they are subjected to the detailed editing and coding work.

Questionnaires should have been checked as part of the procedure for controlling the field force, few problems should be encountered.

1.3.1 Adherence to Sampling Instructions

If the interview was not made with the proper respondent, it should be rejected.

1.3.2 Legibility

Editors should review the responses to all questions on each questionnaire to assure the legibility of the responses.

1.3.3 Understandability

Answers to open-ended questions are often difficult to interpret. The interviewer may have abbreviated the answer to such an extent that it is not clear what the respondent meant.

1.3.4 Completeness

All questions are expected to be answered since “blanks” can mean different things.

1.3.5 Consistency

Each questionnaire is examined to determine if it is internally consistent.

1.4 Editing Eliminates Errors, Coding Expedites Tabulation

Editing is the step whereby researchers eliminate errors or points of confusion in the raw data. Coding is the step whereby researchers assign

respondents' answers to pertinent response categories, thereby expediting the tabulation.

There are three important reasons for studying these topics:

1. The effectiveness of the entire analysis function may be hampered because of poor editing and coding.
2. Editing helps researchers evaluate the field force, the effectiveness of the questionnaire.
3. Since editing and coding costs may exceed significantly from the total survey costs, researchers will want to make sure that both of these steps are properly carried out.

1.5. Planning the Editing and Coding

The design of the questionnaire should anticipate the editing and coding work, since the physical arrangement of the data collection form must allow space for editing the coding. The researchers used six response categories for this question and precoded them (1) through (6) as follows:

_____ Less than 15,0000 (1)	_____ 35,0000 or more (4)
_____ 15,0000-24,9999 (2)	_____ Don't know (5)
_____ 25,0000-34,9999 (3)	_____ Refuse/no answer (6)

The instructions for handling difficult questions (e.g., open questions) should be discussed in detail and illustrated with examples taken from the particular study. All editing is done using a writing

instrument with a color other than the one used by the interviewers. Unless this is done there is no way to distinguish between “original” and “edited” data.

1.5.1 Detecting Incorrect Answers

It is sometimes possible to detect incorrect answers when answers to two or more questions are inconsistent. The handling of such answers depends upon the nature of the inconsistency.

1.5.2 Completing Incomplete Answers

Very little can be done with most incomplete answers. Only where a question ties in with other questions is it possible to fill in the missing data.

1.5.3 Establishing Categories and Coding

After the questionnaires have been edited, the responses to individual questions can be assigned numerical codes. Researchers must review the answers to reach open question and establish meaningful categories that will effectively report the findings of these questions.

Categories	Response	Codes
More than 5 containers	Heavy	(1)
Between 2-5 containers	Moderate	(2)
Less than 2 containers	Light	(3)
Zero contain	Non-consumer	(4)

Some open questions can elicit answers that fall into many different response categories. Researchers typically must make two decisions before such open questions can be coded.

1.5.3.1. Determine the Most Relevant Set of Factors

The researchers must first determine the most relevant set of factors to use when setting up the categories.

1.5.3.2. Establish Appropriate Categories for Each Relevant Factor

After the most relevant factors have been selected, researchers must establish categories that accurately reveal the information contained in the answers people gave to the question asked. After the relevant factors have been selected and the categories have been established for an open question, each questionnaire must be reviewed for the purpose of identifying the category into which a particular response falls. When classifying data from open questions, it is essential that the established categories be mutually exclusive and at the same time cover all possible answers.

1.6. Facilitate Tabulations with Questions

Researchers sometimes find it useful to look at the answers a respondent has given to two to more questions and then write in a numerical code that summarizes the information contained in the answer to all of those questions. Such a code can be thought of as a response to a nonexistent or “ghost” question—in the sense that no such question actually exists on the questionnaire. Researchers will use such ghost

questions when preparing survey data for tabulation, if doing so will facilitate their making the tabulations they need.

1.7. Entering Data into the Computer

After the editor has reviewed the individual responses to all questions and has assigned a numerical code to each response, those codes will be available when the data on the completed questionnaire are to be entered into the computer. Computers are used because

- (a) It is faster to tabulate by computer than manually,
- (b) It is more economical than tabulating by hand,
- (c) Computer tabulations are more accurate than hand tabulations,
- (d) Computers are absolutely necessary when sophisticated calculations and tabulations are to be made.

1.7.1. Key punching Responses to Questions

Column number→	20		40		60	61	
	1		1		1	1	
	2		2		2	2	
			3		3	3	
					4	4	
					5	5	
					6	6	
					7	7	
					8	8	
					9	9	
					0	0	

1.7.2 Checking Data Entered into the Computer

In order to avoid errors in the data entered into the computer, researchers should attempt to check the accuracy of the entered data.

1.7.3 Computer-Assisted Interviewing

When such computer-assisted interviewing is used, the data entry operation is eliminated, except when open questions are used.

1.7.4 Tabulating the Data

After the raw data have been fully prepared and somehow made available to the computer, the tabulation work can begin. Researchers should first prepare a plan specifying which items of data are to be tabulated separately or in combination with other items. Usually such a plan involves setting up dummy tables that are complete with titles, column headings, row headings, and a description of the data contained in the tables.

1.7.5 Misuse of Percentages

Because inappropriate uses of percentages can be a source of confusion, it is important to describe briefly the more common misuses of percentages.

1.7.6 Averaging a List of Percentages

Percentages can not be averaged unless each percentage is first weighted by the size of the sample or the group from which the percentage is derived.

1.7.7 Use of Very Large Percentages

This often defeats the purpose of percentages, which is to simplify.

1.7.8 Using Too Small a Base

Percentages hide the base from which they have been computed.

1.7.9 Two Frequently Used Tabulations

The most simple way is to tabulate responses to only one question at a time. This is frequently referred to as univariate tabulation. A second way to tabulate is to tabulate simultaneously the responses to two or more questions. This is called bivariate or multivariate tabulation.

1.7.10 Univariate Tabulation “Counts” One Question’s Answer

Whether done manually or with a computer, a univariate tabulation is the result of researchers going through all of the completed questionnaires and counting the number of people who gave each possible answer to a single question.

1.8 Dichotomous or Multiple-Choice Questions that Allow only One Answer

Each of these question types has predetermined response categories—usually precoded—that have been established in accord with the overall objectives of the study. The two approaches can be applied to both scale and dichotomous questions as well.

Open Questions That Allow only One Answer

- “Don’t Know” and “No Answer” Responses

Open and Multiple-Choice Questions That Allow Multiple Answers

- What Percentage of the Sample Chose a Particular Response Category?
- What Percentage of the Sample Chose None of the Response Categories? What Percentage Chose Only One of the Response Categories? What Percentage Chose Two Response Categories? What Percentage Chose Three Response Categories? and so on.
- What Combinations or Response Categories were more frequently Chosen by the Members of the Sample”

The answers to the magazine question could be tabulated to determine what combinations of magazines were read by respondents.

- **Of the Total Number of Responses Given by All Respondents, What Percentage was Given to a Particular Response Category?**

Conclusion

The aforesaid discussions just illustrate how it is possible to tabulate multiple response questions in four different ways, each of which organizes the data in a slightly different manner in order to help researchers gain a better understanding of the topic being studied.

Bivariate and Multivariate Tabulations “Count” Answers to Combinations of Two or More Questions

Although univariate tabulations are widely used by researches, it is often possible to obtain more useful information if the answers to two or

more questions are sorted and counted in combination rather than separately. Even when performed on a computer, such a tabulation is essentially equivalent to researchers going through all the completed questionnaires and counting the number of people who answered two specific questions in exactly the same way, practice is to do it on the computer. To do so, the computer must count the number of respondents who have certain code responses to two specific questions, namely the coded response that identifies the respondent's sex as "male" and the coded response that reports the respondent's usage of cents-off coupons as "regularly". This counting process is repeated for "males" who report using coupons only "occasionally" and is then repeated again for "males" who report "never" using coupons. This counting process is repeated still another three times for "females", once for each of the three coupon usage rates.

All of the discussion made above related to univariate tabulation apply also to the questions used in a bivariate or multivariate tabulation. That is, before two or more questions are combined in a single analysis, proper attention must be given to the "don't know" and "no answer" responses, to the treatment of multiple-response questions, and to the certain of the desired ghost questions.

1.9. Self Assessment Questions

1. What do you mean by tabulation and analysis of data?
2. What are the different factors that are important in preparing the raw data?

1.10. Suggested Readings

1. Boyd, Westfall and Stasch : Marketing Research
2. Green, Tull and Albaum : Research Decisions
3. Luck and Rubin : Marketing Research

UNIT – III

LESSON - 6

ANALYSIS AND INTERPRETATION OF DATA

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1.4. Sampling statistics

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1.4.3. Calculate that appropriate statistic.

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1.5. General Applicability

1.5.1. Observe an important difference

1.5.2. Null hypothesis

1.5.3 Calculate the appropriate statistic

1.5.4. Compare the calculated and critical values of Z

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1.12.1. Two-way analysis of variance

1.12.2. Determine the number of degrees of freedom

1.12.3. A final comment on sampling statistics, Chi-square analysis and analysis of variance

1.13. Self Assessment Questions

1.14 Suggested Readings

1.1 Introduction

All of the procedures used in testing the significance are applicable only when probability samples are used. As a result, these procedures require an understanding of standard error.

1.1.1. Significance tests are for data placed into categories

The methods of analysis apply only to variable placed into categories. For example, a respondent's sex and voter registration can be recorded in categories—female or male. A person's occupation is another variable that can only be recorded in categories. Often variables such as age, income and education are only recorded. The analysis of the differences various is typically accomplished by the methods discussed in this chapter.

1.1.2. Two conditions are needed to use significance tests

Two conditions should always be satisfied when statistical tests of significance are applied to research findings. First, researchers will have observed some differences between two or more groups or categories. Second, researchers will have asked the same question of each ground and/or measured the same thing within each group.

1.1.3. When to use three popular tests

This chapter discusses only the three most commonly used tests of statistical significance. These three tests are sampling statistics, Chi-square analysis, and analysis of variance. There will be certain characteristics associated with the data that will help researchers decide which method of significance testing to use in a given situation.

1.2. The number and format of the categories

1.2.1. Sampling Statistics. These are used to test the differences between two numbers found in two distinct categories.

1.2.2. Chi-Square Analysis. The Chi-square analysis is to test the differences observed between two columns of numbers or two rows of numbers found in two distinct categories. Chi-square analysis can be used to test if the pattern of heavy-moderate-light-nonusers observed in one city differs significantly from the corresponding pattern observed in the other city.

1.2.3. Analysis of Variance. The analysis of variance can be used to test the differences observed within a single table of data obtained from certain kinds of experiments. The categories that must be associated with specific observed differences in order to apply each of the three methods discussed in this chapter.

Are the figures recorded in each category percentages

This characteristic help the researchers to determine whether a specific method of testing significant differences can be applied or not.

Whether the data were obtained through experimentation or by descriptive field survey will also influence the decision

Experiments should be designed in such a way that all three methods of significance could be applied to the findings. The data obtained from surveys should only be tested using sampling statistics and Chi-square analysis.

1.3. Followed while applying tests of significance

It is helpful to use the following simple four-step general procedure when applying tests of statistical significance.

1.3.1. Observe a difference that can have important implications for the marketing manager.

The researchers can observe many differences, but only a few of those differences might have important implications for the marketing manager.

1.3.2. State a null hypothesis that can be tested using one of the three methods discussed in this chapter.

If it is possible for researchers to obtain evidence that will lead them to reject the null hypothesis, they will be able to conclude that the observed difference is too large to have occurred by chance due to sampling variation. This leads to conclude that the observed difference must reflect a real difference that exists in the population being studied.

1.3.3. Calculate the appropriate “Statistic” which quantifies the observed difference relative to the sample size used to gather the data.

In all significance tests it is necessary to use one or more formulas to calculate that quantities and summarizes the observed difference, while taking into consideration the size of the sample used to collect the data.

1.3.4. Check to see if the calculated value of the statistic is large enough to allow researchers to conclude that the observed difference is statistically significant.

If the calculated value of the statistics is larger than a certain “critical value”, researcher will have the evidence to reject the null hypothesis. Therefore, to complete this step, researchers should have available a table of the critical values of the appropriate statistic.

1.4. Sampling statistics

The three situations to which sampling statistics are most commonly applied are

- (1) comparing the percentages obtained from two samplers;
- (2) comparing the percentage obtained from one sample with an expected or hypothesized percentage;
- (3) comparing the average values obtained from two samples.

The following steps are applied.

1.4.1. Observe and important difference.

1.4.2. Null hypothesis

To test the significance of this difference, the researchers established the null hypotheses. That is, they hypothesized that the two observed percentages simply reflected sampling variations around the true percentage usage rate. Basically, this hypothesis assumed that if a much larger study were carried out, the average usage rate would be about the same in both cities.

1.4.3. Calculate that appropriate statistic.

1.4.4. Compare the calculated and critical values of Z

The last step in this procedure involves a comparison of the calculated value of the statistic with the value of the statistic associated with a 95 percent confidence level.

1.5. General Applicability

The above-described procedures can be applied to any two sample percentage—including those obtained from before-after tests, from surveys of men only compared with women only, from surveys in each of city A and city B, and many others.

An example of comparing a sample percentage with an expected percentage

The second situation in which sampling statistics are commonly used involved comparing a percentage obtained from a sample with a percentage that managers or researchers had expected to exist. When test marketing the new chocolate-flavored milk additive. The manager of the product had decided that, if the new flavor achieved a usage rate of 75 percent among the target households, he would recommend to his senior management that the new flavor be introduced throughout a four-state region. In effect, the manger had “expected” (or hoped for) a usage rate of 75 percent. Based on the sample of 200 target households, the new flavor had achieved a usage rate of 68 percent. The four-step general procedure can be used to determine if this difference of seven percentage point (75%—68%) is a statistically significant one.

1.5.1. Observe an important difference

1.5.2. Null hypothesis

To test the significance of his difference, the manager established the null hypothesis. This hypothesis assumed that if a larger study were carried out in the test market city, the usage rate would in fact prove to be to desired level.

1.5.3 Calculate the appropriate statistic

The difference between the observed and expected percentage can be applied.

$$Z = \frac{\text{Expected \%} - \text{Observed \%}}{S_p}$$

In this case, the standard error of a percentage is used in the denominator instead of the standard error of the difference between two sample mean percentages.

Where

S_p = Standard error of a percentage.

p = Expected percentage in the universe with the characteristic being studied (in this case, usage).

q = $(100\% - p)$

n = Size of sample

Therefore,

$$Z = \frac{\text{Expected \%} - \text{Observed \%}}{S_p}$$

1.5.4. Compare the calculated and critical values of Z

The critical values used in situations such as these values are associated with only one tail of the distribution of sample means. The one-sided nature of this testing causes it to be referred to as a one-tail test.

1.6. General applicability

The above mentioned can be applied to any situation where researchers want to test if a sample percentage is too small—or too large—to have come from a universe in which a certain percentage of sample units are “expected” to possess a given characteristic.

Observations

Following comments regarding the application of sampling statistics.

If the calculated Z value had been smaller than 1.0, the manager would not have the evidence needed to reject the null hypothesis. Under these circumstances, the manager would probably not consider the observed difference to be significant.

1.8. Use the t distribution when samples are small

When a large sample is taken—say, of 100 or more respondents—a table of the area under a normal curve is used to determine the critical Z value for a specified confidence level. If the sample is small—say, 30 or fewer respondents—the result can be easily affected by atypical items. Thus, the theory of normal distribution can not be used, as it is based on the assumption that a sample sufficiently large to balance out the extreme cases. The means of small samples follow the t distribution. The main reason of using the t distribution is that researchers use a larger number of standard errors in order to obtain a specified level of confidence.

Whenever the sample is a small one, researchers should use a table of the t distribution rather than a normal distribution to identify the appropriate number of standard errors associated with the confidence level they desire.

1.9. Chi-square analysis

Chi-square analysis and analysis of variance are complex mathematical subject that cannot be fully treated here. The following discussions are designed to help the reader to gain an understanding of the basic concepts underlying them. The Chi-square analysis can be used to test for the statistical significance of differences observed between two equivalent sets of categories that result from field surveys or experiments.

A Chi-square analysis can be used when the data satisfy four conditions.

1. There must be two observed sets of data or one observed set of data and one expected set of data.
2. The two sets of data must be based on the same sample size.
3. Each cell in the data contains an observed or expected count of five or larger.
4. The different cells in a row or column must represent categorical variables.

There are three commonly encountered applications of Chi-square analysis. Researchers often must test whether the differences in such distributions are statistically significant.

1.10. An example of comparing two observed frequency distribution

The four-step general procedure described below can be used to apply a Chi-square analysis to the data.

1.10.1. Observe an important difference

If there was a statistically significant difference between the two columns of data, the researcher would conclude that the new flavor was causing a heavier consumption pattern than that caused by the old flavor.

1.10.2. Null hypothesis

The researchers decide to test the null hypothesis that there are no differences in the consumption patterns of the milk additive flavors in the two cities. The researchers believed that the differences in the two columns of data only reflect sampling variations.

1.10.3. Calculate the appropriate statistic

The appropriate statistic that summarizes the differences in the two columns of numbers is the Chi-square statistic (χ^2), and it is calculated using the formula.

Where

- k = The number of cells.
- i = The i^{th} cell (where $i = 1, 2, \dots, k$).
- f_i = The observed count in the i^{th} cell.
- F_i = The “expected” count in the i^{th} cell.

The summation sign after the equal sign means that the equation following must be added for all the cells in the table.

It is also necessary to determine the number of degrees of freedom associated with the observed set of data—in this case, a column of data consisting of four cells. When there are four cells in the observed data, there are three degrees of freedom associated with the data. In general degrees of freedom (d.f.) associated with column or row data consisting of k cells is :

$$\text{d.f.} = k - 1$$

1.10.4. Compare the calculated and critical values of X^2

The critical value researchers need in order to evaluate the statistical significance of the observed differences. The procedure described above can be applied to any two rows or columns of equivalent data—including those obtained from before-after tests, from data comparing females with males, from surveys.

1.11 Analysis of variance

The analysis of variance can be applied to a single table of experimental data. Each row and column represents a different category of a variable being tested in the experiment. The numbers in the table are the actual count of responses that are measured in the experiment.

Analysis of variance can be applied to data resulting from experiments using only one test variable. Both of these tests involve only one variable—the analysis of variance used is called a one-way analysis of variance. The four step general procedure described at the beginning of this chapter can also be used to apply an analysis of variance, as the following example will illustrate.

In a one-way analysis of variance three types of variation must be calculated.

- A. The total variation in the entire set of data.
- B. The variation between the column means when compared with the total mean.
- C. The variation within each column of data when compared with the mean of that column.

1.11.1. Total variation

This is calculated by summing the square of the deviation of each item in a set of data from the mean of all items.

$$\text{Total variation} = \sum (x_k - \bar{x})^2$$

where

t = The number of items in the set of data.

k = The Kth item (k = 1, 2, ..., t)

X_k = The value of item k.

X = The mean of all t items.

1.11.2. Variation between the two column means

This is calculated to the total mean. The variation between the total mean and the two column means is calculated as

$$\text{Between-column variation} = (n_1(x_1 - \text{total mean})^2 + (n_2 (x_2 - \text{total mean})^2)$$

where

n₁ = The number of observations in column 1.

n₂ = The number of observations in column 2.

x₁ = The mean of column 1.

x₂ = The mean of column 2.

1.11.3. Variation within each column

The variation existing within the two columns of data should also be calculated. The variation within each column is considered to be unexplained variation because it can only be attributed to random or unexplained factors. This within-column variation can be determined by calculating the variation

of the numbers in each column relative to the column mean, and adding up this variation for the columns.

$$\begin{aligned} \text{Total variation} &= \text{Variation between columns} \\ &+ \text{Variation within columns (unexplained)} \end{aligned}$$

1.11.3.1. Determine the number of degrees of freedom

The next step in the analysis is to determine the number of degrees of freedom (d.f.) associated with the total variation and with each variation component.

This also means that the degrees of freedom associated with the unexplained variation can be determined from the relationship :

$$\text{Unexplained d.f.} = \text{Total d.f.} - \text{Between-column d.f.}$$

1.11.3.2. Calculate the estimated variance

The calculated variation components and their respective degrees of freedom are then used to calculate the estimated variance associated with each variation component.

$$\text{Estimated variance} = \frac{\text{Variation}}{\text{Degrees of freedom}}$$

It should be noted that the estimated variance is a measure of variation per degree of freedom. In other words, the estimated variance transforms each component's variation into an equivalent "per unit" variation.

The researchers should compare the variance with something that can be used as a standard. In one-way analysis of variance, researchers typically use the unexplained estimated variance as the basis for evaluating the between-column estimated variance.

1.12. Compare the calculated and critical values of F

In order to make the required comparison, researchers should use a table to determine the critical value of F.

It should be noted, however, that analysis of variance does not tell the researchers which of the two packages is more effective. Therefore by observation, the researchers round conclude to the particular data.

The above mentioned method can be applied to any experiment involving two or more different treatments of a single test variable.

1.12.1. Two-way analysis of variance

Analysis of variance can also be applied to experiments using two or more test variables. When an experiment is testing the effect of two variables in combination, the analysis of variance is called two-way analysis of variance due to there being two test variables.

The basic procedures underlying one-way analysis of variance apply also to two-way analysis of variance. The addition of a second test variable requires some minor changes from the procedures described above. It is that the experimental data are presented in a table consisting of a number of rows that represent the different treatments of one of the test variables, and a number of columns that represent the different treatments of the second test variable. Further, it is very important to calculate the variation between the rows as well as the variation between the columns.

The variation of row means form total mean can be calculated using the formula:

$$\text{Row variation} = C [\sum(\text{row mean}_i - \text{total mean})^2]$$

where C and R are the number of columns and rows in the table, respectively, and I is used to identify a specific row.

This indicates there is no variation due to the different prices, so the different prices do not appear to have any effect on sales.

The variation of column means from total mean can be calculated using the formula:

$$\text{Column variation} = R [\sum(\text{column mean}_i - \text{total mean})^2]$$

where R and C are defined above, and j is used to identify a specific column.

This show the amount of variation due to the different flavors.

Unexplained Variation—the third component of total variation in a two-way analysis of variance—is the variation unaccounted for by either the variation due to the different prices (rows) or the variation due to the different flavors (columns). This component of variation can be calculated using the relationship:

$$\begin{aligned} \text{Unexplained variation} &= \text{total variation} \\ &\quad - (\text{row variation} + \text{column variation}) \end{aligned}$$

1.12.2. Determine the number of degrees of freedom

As in one-way analysis of variance, the next step in the analysis is to determine the number of degrees of freedom associated with total variation and with each variation component.

1.12.3. A final comment on sampling statistics, Chi-square analysis and analysis of variance

When conditions permit, it is possible for researchers to apply two—or even three—of these methods to different portions of the same set of data.

1.13. Self Assessment Questions

1. What are the different points followed while applying tests of significance?
2. What is chi square test ? Explain its significance?
3. Write short notes on :
 - Chi square test
 - Analysis of variance

1.14 Suggested Readings

1. Boyd, Westfall and Stasch : Marketing Research
2. Green, Tull and Albaum : Research Decisions
3. Luck and Rubin : Marketing Research

UNIT – IV
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SAMPLING DESIGNS
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1.1. Sampling Plan

After formulating the problem and developing a research design, researcher has to decide whether he will conduct a census or a sample survey to collect the data needed for the study. While developing a sample for the research the following steps are taken.

Defining Population or Universe

The word population has displaced the older term universe, which is derived from the universe of discourse of logic and synonymous with aggregate. However, meaning of population is specified by the objectives of the research project. The objective of the study has to be well defined. Defining a population incorrectly may render the results of the study meaningless or sometime misleading. In practice, universe characteristics are less defined and are difficult to measure.

1.1.1 Specify the Sampling Frame

After defining the problem, sampling frame is specified. A sampling frame means a listing of the general components of the individual units. It is a list from which the sample is selected. In a perfect sampling frame, every element of the population is represented once but only once. However, no sampling frame is perfect.

A frame may take any of several forms in marketing research.

- **The Direct List Frame.** A direct list for a universe, of course, matches its universe closely. That lists are seldom completely current should be noted, however.

- **The Inclusive Frame.** This frame includes all units indicated by the universe definition and other units which, similar in some respects, are excluded.
- **The Indirect List Frame.** An indirect list frame consists of units, which are different but directly associated with the units composing the defined universe. This associates potential respondents with the dwellings in which they reside.
- **The Set of Rules.** At times, usable lists are almost completely lacking and we must resort other means of sorting out a sample. Qualifying questions would then seek information indicative of these two qualities, and rules would be set to determine the quality levels appropriate for inclusion in the sample. Although it is impossible to work from a perfect frame, good research planning requires knowledge of the shortcomings of the frame so as to adjust the sampling design.

1.1.2 The Common Source of List May be:

Database frame.

Telephone Directories.

Trade Directories.

Organization List.

However, an obvious sampling frame is the self accumulated list, a list already in the hands of the marketing firm.

1.1.3. Specifying Sampling Unit

After defining population, the researcher must decide whether the survey is to be conducted among all the members of the population or only

a part of the population. Choice must be made between census and sample. A sampling unit is very important part of research which gives certain direction to the researcher. In making decision of census or sampling, various factors like size of the population, funds available for the completion of study, extent of facilities available. The time limit etc. are taken into consideration. However, a sample must be representative of the population. It should be valid, accurate and adequate in size. A sampling unit is the basic unit containing the elements of the population to be sampled. Sample unit is the basic level of investigation. The selection of sample unit is dependent upon the overall design of the project. In case of multi stage sampling the units are different at different stages of sampling.

1.1.4. Selection of Sampling Methods

It is important that the sample be representative of the population. An appropriate sampling methodology is influenced by the characteristics of the population, objectives of the research and the available budget. Initially, sampling methods can be classified into two categories

- Sampling Methods
- Probability Sampling
- Simple Design
- Complex Design
- Non probability Sampling

1.2. Probability Vs. Non-probability Sampling

Probability samples are selected by using stable, independent data generating process. Further, the selection of specific units in the sample depends entirely on chance. No human judgement is involved in the sample

selection. It is frequently used sampling technique. Every population has equal chance of being selected in probability sampling.

Non probability sampling The principal of normal distribution is not applicable in the case of non-probability samples. The researcher usually prefers non-probability sampling over probability sampling due to cheap and convenient. Although non probability sampling does not yield certain benefits like probability sampling. the researcher generally opt for non-probability sampling because of certain limitation.

1.3. Probability Sampling Techniques

1.3.1. Random Sampling

It is important that the sample is representative of the population. It is important to apply principle of randomness be embodied in the sample selection procedure. following methods of random sampling are discussed as there under:

1.3.1.1 Lottery method

This is the simplest and popular method of random sample selection. This method is based on the lottery system operating in the market.

Two methods of Lottery system are

- (a) Sampling with Replacement
- (b) Sampling without Replacement.

In the Sampling with Replacement method, one slip is selected by draw, it may be replaced, and consequently it has a chance being selected again. This is also known as unrestricted random sampling, on the other Hand

Sampling without Replacement, the selected slip is set aside in the subsequent draws, it does not get a chance of being selected again.

1.3.1.2 Use of Table of Random Number

To overcome the limitation of above discussed method, use of table of random. This is very simple method to use. For example, for the selection or random sample out of a given frame, one may simply start to read numbers from a table of random numbers. The main advantage of this method is that the chances of personal bias is very rare and it becomes best representative of the population.

1.3.1.3 Use of Computer

Now a days, lottery method and table of random number method seems to be tedious and time-consuming. Therefore, computer may be used for drawing a random sample in the manner the researcher wants.

1.3.1.4 Grid System

This method is generally used for selecting the sample of an area and so in this method, a map of the entire area is drawn. The main advantages of random sampling are that it is very simple to apply, free from biases, more representative of the population.

1.3.2. Simple Random Sampling

This sampling technique gives each element an equal and independent chance of being selected. A simple random sampling procedure is one in which every possible sample of n objects is equally likely to be chosen. The simple random sampling is not suitable for drawing a sample from a large heterogeneous population.

1.3.3. Stratified Random Sampling

In the stratified random sampling, population is divided into number of subgroups or stratas and then a simple random sample is selected within each strata. Technically, a stratified random sample is one in which a simple random sample is taken from stratum.

Stratified samples have the following characteristics the entire population is first divided into an exclusive and exhaustive set of strata; From each stratum a separate random sample is selected. From each separate sample, some statistics is computed; Sample variances are also computed within each separate stratum. However, the main reason for using stratified samples is the difficulty of obtaining adequate sample frames. A stratified sample requires that members of each stratum be selected randomly from that stratum.

1.3.4. Systematic Random Sampling

A systematic sample is one in which each sample element has a known and equal probability of selection. It is a procedure that consist of selecting every nth element in the population, following a random starting point.

$$K = \frac{\text{Population Size}}{\text{Sample Size}}$$

1.3.5. Difference between Systematic Sampling and Random Sampling

The main difference between systematic sampling and simple random sampling is apparent in the use of the word 'systematic' and 'random'. The system used in systematic sampling is the interval, whereas the randomness

in simple random sampling is determined through the use of successive random draws. Although systematic sampling can lead to a greater reliability low sampling error than simple random sampling but it is less representative in the final analysis than simple random sampling because it arbitrarily places population members into groups before the sample is selected.

Cluster and Area Sampling

Cluster sampling means random selection of sampling units consisting of population elements. Each such sampling unit is a cluster of population elements.

How to make defining Cluster Sample ?

S.No	Population	Element	Sampling Units
1	State	Households	Blocks
2	City	Individuals	Households
3	H.P. University	Students	Affiliated Colleges
4	Rural Areas	Households	Villages
5	Industrial Areas	Industrial Units	Industrial Estates

The main advantage of cluster sample relative to simple random sampling is in lower interviewing costs rather than in greater reliability.

1.3.6. Cluster Sampling Vs. Stratified Sampling

Clustering is done on the basis of geographical areas of organisational units. While stratification is done on the basis of variables under study. In cluster sampling pre-secured and homogeneity between sub

group. While in stratified sampling homogeneity within sub-groups the population into areas such as districts, villages, or blocks in a city.

1.3.7. Multi-Stage Sampling

In this method, sampling is carried out in two or more stages. Multi stage sampling is used widely where the population is scattered over a wider geographical area.

1.3.7.1 Sampling with Probability Proportionate Size (PPS)

If the same number of persons are then selected from each of the selected clusters, the overall probability of any person will be the same. Thus, PPS is the best method for selecting a representative sample of population elements in multi-stage cluster sampling.

1.3.7.2 Multi-Phase Sampling

Multi phase sampling means some information are collected from the entire sample. When this procedure is restricted to two phases is known as Two-Phase sampling and when the procedure is extended to more than two phases of selection known as.

1.3.7.3 Multiphase vs Multi-Stage Sampling

The main distinction between two sampling methods is that in the multi stage sampling, each successive stage has a different unit of sample, whereas in multi-phase sampling the sample remains unchanged. The main advantage of the multi phase sampling is that it considerably reduces the burden on respondents. It help to provide the necessary information in time and accuracy may be maintained easily.

1.3.7.4 Replicated Sampling

In this method, several sub samples are selected from the population instead of one full sample. All the sub samples have same design. The sample may be divided based on any sampling technique like simple or stratified, single or multi stage or simple or multi stage or simple or multi phase sampling.

1.3.7.5 Non Probability Sampling

The main difference between probability and non probability sampling methods is the mechanics used in the sample design.

1.3.8. Convenience Sample

In this method the researcher selects the sampling unit according to his convenience. The selection of place and prospective respondents is subjective rather than objective. Convenience samples are often used in exploring situations when there is need to get only an approximation of the actual value quickly and inexpensively. However, convenience samples contain unknown amounts of both variable and systematic selection errors. This method is highly biased and does not represent the universes.

1.3.9. Purposive and Judgement Sampling

In this method of sampling, the researcher purposively selects certain units for study. This selection requires the judgement or an educated guess as to who should represent the population. The sample selection on judgement basis depends on the subjective judgement of the researcher. Sample elements are hand picked because it is expected that they can serve the research purpose. The selection may not be on the basis

that they are representative, but rather because they can offer the contributions sought.

1.3.9.1 Purposive Selection denotes the method of selecting a number of groups of units in such a way that selected groups together yield as quickly as possible the same averages. In purposive selection, there is specific objective. The researcher tries to include all relevant and useful units in the sample. The main disadvantage of purposive sampling is that it is based on hypothesis in which it is not possible to test through practices.

1.3.9.2 Judgement Sample is somewhat different from Convenience sample in concept. They require the judgement as to represent the population. But however amount depends upon the degree of expertise of the person making the selection. As the sample size increases judgement becomes less trustworthy as compared to random selection process.

1.3.10 Quota Sampling

In this method, out of several stratum in which different stratas are divided. It ensure that the sample is representative by selecting sample elements in such a way that the proportion of the sample. The quotas are determined through application of the research objectives and are defined by key characteristics used to identify the population.

Quota sampling is therefore a method of stratified sampling in which the selection within strata is non-random. The researcher starts with knowledge of how the universe is divided by strata, and investigators are instructed simply to fill the cells, so that the sample obtained is indeed representative in terms of the cells.

The controls used in quota samples must be easy for the interviewer to classify, closely related to the variables being measured in the study, and; kept reasonable numbers so, as not to produce too many cells.

Therefore, in quota sampling, researcher exercises and controls his judgement by selecting his sample in accordance with one or more known parameters.

The main advantage of using quota sample is lower cost involved and convenience for the interviewer in selecting respondents to fill each quota. Field work can easily be organised. It is also difficult to verify whether a quota sample is indeed representative.

It is impossible to estimate sampling error. It may be difficult to check over the field investigators under quota sampling

1.3.11. Snow ball Sampling

Snow ball sampling is also known as Multiplicity sampling. It is a procedure in which respondents are selected randomly but the additional respondents are then obtained from referrals or by other information provided by the initial respondents. Selected respondents are further asked to provide the names of others who also presumably qualify to be selected. In this manner, additional respondents are referred by previous respondents. Snowball sampling is very useful in studying socio-metric studies on social groups. It is more appropriate when there is limited and disappointingly short sample frame.

1.4. Determining Sample Size

What should be the size of the sample It is a question not easy to answer. Some author says that the sample size should be 10% of the

population while some agree that the size should be 5%. However, the size of sample depends upon various factors. But, the sample should neither be too large nor be too small. An optimum sample in survey is one, which fulfils the requirements of efficiency representativeness, reliability and flexibility. Sample size decision is usually a compromise between what is theoretically perfect and what is practically feasible.

The question of sample size is complex since it depends on various factors discussed below.

The size of sample depends upon the nature of Study. Depends upon the nature of universe. If it is homogenous in nature the small sample may work. Sample size depends upon the number of classes determined. Practical consideration and standard of accuracy play an important role in considering sample size. If the sample is selected scientifically, than small sample may also work and produce accurate results. The sample size also depends upon the size of Questionnaire. The smaller the size of Questionnaire schedule, the small sample size will be preferred. The sample size also depend upon the sampling methods. Large sample is required when random sample is required and small sample will work if other sampling method like stratified sampling is used.

There is no relationship between sample size and representativeness. The task of selecting sample size depends upon whether a probability or non-probability sampling method is used. While using probability, sampling techniques, the researcher can estimate size of sampling error and adjusting it in the results. Therefore, this is very confusing situation with the researcher that how to select a correct sample size. To solve this

researcher's dilemma, some statistical tools are used which enable him to select the correct sample size.

1.5. Approaches used for determining Sample Size

1.5.1 Arbitrary Approach

This approach may take rule of thumb statement regarding sample size. Say of atleast 5 percent of the population has been taken. No doubt, arbitrary approach is easy to apply, but neither efficient nor economical when the population under study is large.

1.5.2 Conventional Approach

In this method, some conventions are used to select the right sample size. This approach of taking same sample always may not appropriate or representative in case the sample is large. The basic difference between the arbitrary and conventional approach is that conventional approach has no logic, whereas the conventional approach appears logical.

1.5.3 Cost Basis Approach

Cost factor is very relevant for data collection for conducting interviews, for telephonic/mail/personal surveys etc. Therefore while deciding sample size, cost has to be taken into consideration. Cost basis approach is applied according to the nature of research.

1.5.4 Statistical Analysis Approach

Sample size may be determined by using statistical analysis approach. Statistical analysis is used to analyse subgroups within a sample. The statistical approach is based on some basic concepts relevant to sample size.

1.6. Sampling Distribution of the Mean

The different samples from the same universe will lead to different estimates of the universe mean or universe percentage. However, actually the population value is not known and therefore the actual accuracy of the sample estimate cannot be assessed. And its probable value can be estimated. Such a listing of all possible means, together with their relative frequencies of occurrence, is called sampling distribution of the mean or, for short, distribution of sample means. In this case, it is the distribution of sample means, for simple random samples of size two, from the Shimla city universe of six tourists.

1.7. Standard Deviation

When constructing a confidence interval estimate of the universe mean, researchers also use another characteristic of the approximating normal distribution. That characteristic is its standard deviation. Standard deviation is the square root of the mean of the squares of the deviation of individual items from their arithmetic mean.

1.8. Standard Error

A sampling distribution is the probability distribution of a specified sample statistic for all possible random samples of a given size n drawn from the specified population. The standard error of the statistic is the standard deviation of the specified sampling distribution.

This measure is called standard error of the mean, which may be denoted by $S.E._x$ or $\sigma_{\bar{x}}$. The standard error is an important characteristic of the distribution.

In a simple random sample, $S.E._x$ can be estimated from a single sample

1.9. Specify the Sampling Plan

After discussing the methods of sampling and size determination of sample, now it is essential to prepare a sampling plan which involves the specification of how each of the decision made. Various aspects of sampling are logically joined together. The practical goal of a sample is to produce data of a desired degree of accuracy.

1.10. Select the Sample

the final step in the sampling process is the selection of sample elements. This requires a substantial amount of hard work in office and field, particularly at the time of personal interviews. Marketing research is not possible without selecting accurate sample.

1.11. Review Questions

1. What is sample and Sampling? Why it is used in marketing research?
2. What are the major considerations in deciding sample?
3. Differentiate between probability and non-probability sampling.
4. What are the advantages and disadvantages of using simple random sampling in sample selection?
5. Systematic sampling is probability sampling. Discuss.
6. How multi stage sampling differ from multi phase sampling?
7. In what way is a systematic sampling less representative of the population than simple random sampling?

1.12. Suggested Readings

1. Boyd, Westfall and Stasch : Marketing Research
2. Green, Tull and Albaum : Research Decisions
3. Luck and Rubin : Marketing Research

UNIT – V
LESSON - 8
MARKET AND SALES ANALYSIS RESEARCH

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1.7.3. Sales Analysis by Customer

1.8. Self Assessment Questions

1.9 Suggested Readings

1.1 Introduction

Marketing management relies heavily on research in setting marketing policies, in planning marketing operations, and in controlling marketing operations, including the functioning of the sales unit. market and sales analysis research covers the identification and measurement of all those variables that individually and in combination have an effect on sales. These activities measure the market potential, sales forecasting, sales territory evaluation, and measurement of sales representative's performance.

Market and sales analysis research makes up a large portion of the activity of most marketing research departments. Research studies dealing with the development of market potentials, market share analysis, and sales analysis are among the most important activities undertaken by a marketing research unit. Short range forecasting, long range forecasting, and establishment of sales quotas and sales territories are also significant activities.

Market potential analysis will apply to those studies of individual markets that seek to determine the sales potential within them. Sales

analysis will include the analysis of a company's sales to ascertain such things as distribution of sales by territories, by type and size of customer, by order size, by product, and by combinations of these classifications.

1.2. Market Potential Analysis

Marketing management serves to help determine the amount of sales effort that should be allocated to a specific market. Market potential must be stated for a given product for a given period of time, usually a year. The sales potential for is the maximum amount that can be sold in that area by all sellers of product. Area potentials can be expressed in both absolute terms and as a percent of the total market.

Since most products are similar to a number of others, the degree of substitution must be considered in the development of potentials. The decision on include or exclude is closely substitutes.

Market potentials and sales forecasts are not the same thing, although the two are used interchangeably. Market, potentials refer to total sales possibilities. Several different potentials may be considered, depending on what conditions. The word potential has specific meaning only in terms of the assumptions used when making the calculation.

1.3. Uses of Potentials

1.3.1. Allocation of Marketing Resources.

The primary use of information on market potentials has been in the allocation of marketing resources, It is difficult to estimate a market response function and by this way a given group of potential customers will respond to various combinations of marketing inputs. The resources will be invested in each market until the incremental returns of resources

invested is equal in each market or until further investment yield a return lesser than could be obtained by investing elsewhere. Furthermore all selling effort sales force, advertising, and non-advertising promotion should be allocated only after a consideration of potentials.

1.3.2. Potential Not Sole Criterion for Allocating Sales Effort.

The primary usefulness of market potentials is to focus attention on the relative worth of individual markets. Potentials do not reveal the competitive structure of the market and the firm's ability to exploit that market. The Market responsiveness is a function of the potential the competitive structure, and the firm's input into the market. The latter also includes managerial ability. Therefore the firm must appraise realistically its own abilities-both qualitatively and quantitatively. The firm needs to augment its potential data with information about the competitive structure of the individual markets. The following information about each of its markets should be considered.

1. Number of brands in the market and the brand share of each.
2. Trend of each major brand's market share.
3. Amount of money spent by the major brands in advertising.
4. Price structure.
5. Distribution structure

These data are then used in connection with the company's experience in the market plus the data on market potential. These factors form the basis factors form the allocation of its sales resources to the various markets. The ultimate objective is to make an optimum allocation of the sales resources among the alternative markets. However, a careful study of

the potential and competitive structure should permit the firm to array the markets in order of their likelihood of response to sales efforts.

In general, sales resources are allocated in proportion to potential

Defining Sales Territories. A sales manager typically tries to develop sales territories that are equal in sales potential and in workload so that each salesman has an equal opportunity to make sales.

Setting Sales Quotas. Sales quotas should be set after market potentials have been derived and sales territories established. The potential for each territory is then known but sales quotas must consider past sales performance, sales effort during the coming year, and anticipated activities of competitors. Quotas are usually set for each sales territory and for each sales representative. They are ordinarily not the same as potentials or even of the same relative size.

Sales quotas set in light of sales potentials furnish a much better basis for measuring the efficiency of sales representatives than do quotas set by the old rule of thumb. If market analysis shows that sales representative A has a territory with far less potential than sales representative B, the sales manager may wonder if representative A may not actually be superior. A shift of the two might lead to an improvement in total sales.

However, market potential and sales effectiveness are two of the basic determinants of sales results in a territory to measure sales representatives performance. Therefore, it is necessary to take into account some of the other factors which influence sales results of the variation in

sales among territories. These factors and the methods of measuring them were the following:

Factor	Method of Measurement
1. Market potential.	Sales in territory.
2. Territory workload.	Weighted index
3. Experience of sales representative.	Length of time employed
4. Motivation and effort of sales representative.	Aggregate ratings by field sales manager
5. Company experience.	Weighted average of market share past four years.
6. Company effort.	Advertising expenditure

1.4. Market Potential Analysis

Sales potential is a key factor in establishing salesauptas, and other measurable factors play major role, it should be remembered that the setting of quotas involves interpersonal relationship between the sales manager and the salesman. Since salesmen vary in personal reactions to the challenge and risk implied therefore the successful manager is one who determined quota objectively to each individual salesman.

1.5. Methods for Measuring Market Potential

Two major methods are available for estimating market potentials. One of these involves the use of direct data. The other method involves the use of corollary data-data related to, but different from, the product at hand. Corollary data methods can use single or multiple factors, and the latter can be combined in a variety of ways.

1.5.1. Direct Data Method. The usual procedure in using such data is to break down total industry sales by the firm's sales territories. The percentage distribution is used as a measure of the relative potential existing in each of the firm's territories. These percentages can then be applied to the firm's estimate of its total sales to arrive at a potential figure for each territory.

It might be concluded that management should exert itself in the weak areas where the firm has not been able to obtain its proper sales. Therefore, it cannot be stated categorically that it will be profitable to attempt to reach potentials in such territories. An analysis such as the above, however, will highlight those areas that need to be investigated to determine why the company is not obtaining its share of the market. This is the first step in deciding what action, if any, should be taken.

Total industry sales data may be obtained in some cases as a result of licensing or the imposition of taxes. Trade associations frequently compile total industry data by having their members report shipments. The principal advantage of using total industry sales to measure market potential is that actual results are being used. The method is straightforward and does not require as much clerical work as do some of the other methods.

1.5.2. Corollary Data Method. The corollary data method of measuring market potentials is based on the idea that, if a given series of data is related to a second series of data. The distribution of the second series by market areas may be used to indicate the distribution of the first series in the same market areas.

1.5.3. Single Factor Indexes. Single factor indexes are the most simple of the corollary data methods of market analysis. This is more apt to be satisfactory if the two items have a closely related demand. Factors other than sales of related products are also used in the corollary data, single factor method. The reasoning back of this use of population data is that sales can be made where people are therefore, if one area has twice as many people as another, it has twice the sales opportunity. Disposable income is a general index often used to measure general potential for consumer goods. Many analysts in developing market potentials for industrial products use the number of production workers in the target industries to measure the relative potential of different areas. It is hard to establish the precise relation ship between the index series and the product at hand.

1.5.4. Multiple Factor Indexes. Not all market potential indexes are developed from a single series, many of these indexes are developed by particular companies or industries to measure market potentials for their products. Others are developed by independent organizations. Special multiple factor indexes are designed to measure the relative potentials of different markets for a particular product. When such indexes are constructed for specific products, it seems logical that they should measure potential relatively accurately

For example, potential buyers are identified as:

- Males
- 35-45 years old
- Professionals

- Incomes higher than \$ 150,000

In fact, this is more of a single factor index because any one person must have all of these characteristics to be considered a potential buyer. As indicated above, many subjective decisions tend to be made in using the multiple factor procedure. Many such judgments are based on estimates of how close the indexes obtained correspond to actual sales results. A multiple factor index, however, may correspond in general with the sales pattern but may still show specific areas that do not correspond. Multiple regression analysis is frequently used to eliminate some of the subjective aspects of the multiple factor method, such as determining the relative importance of alternative factors and the weights to be assigned each factor. But since the dependent variable is not known. General multiple-factor indexes have been developed by a number of organizations. The best known general index of this type is the Sales and Marketing Management Buying Power Index. This index is constructed from three factors income, retail sales, and population. Comparisons of different general indexes, however, show many significant variations in the potentials for the same markets. One solution is to compare the indexes with actual sales and to select the one which most closely approximates sales. A major weakness of the general index is that it is general that is, it is not designed to measure the potential for a specific product. This assumes that the relative market potential in a given area is the same for all consumer products. Thus, while general indexes are available for quick and easy use, they have little else to recommend them over special indexes.

1.5.5. Use of Surveys to Determine Potentials. This procedure consists of projecting sample survey results to the total market. Because the Standard Industrial Classification system as developed by the federal government is by far the most widely used system of industrial classification, it is described here in some detail but the system is not without its drawbacks.

1. When an establishment produces two or more products, the data on the primary product are inflated.
2. When an establishment is integrated it is not shown as part of the industry that produces a component part.
3. When an establishment is part of a company complex that engages in centralized buying, that fact is not taken into account.
4. When a firm makes a specialized product that is not important enough to constitute an industry, it may be grouped with producers of other unrelated types of products in a miscellaneous category.

It is more difficult to use the survey approach to determine market potentials for consumer goods than for industrial goods. Buying intention studies are typically limited to major purchase items for obvious reasons. Even so, their reliability can be questioned because of the assumptions made regarding future conditions under which the purchase will or will not be made.

The procedure for estimating market potentials for consumer goods using the survey method is essentially the same as for industrial goods.

1.6. Sales Forecasting

The sales forecast is the factor around which most business planning centers. Such important areas of decision making are production and

inventory scheduling, planning of plant and equipment investments, manpower requirements, raw material purchases, advertising outlays, sales force expenditures, and cash flow, which are dependent on the sales forecast.

Sales forecasting is a complex subject that uses a variety of concepts and techniques. Because it is important to business planning, and because the traditionally used techniques have been found wanting, researchers have turned to new techniques, most of which are highly sophisticated and require that a great deal of historical data be processed on a computer. For this reason, and because the newer techniques are too complex to discuss here, only the more traditional approaches will be described. These can be categorized as being either subjective or objective.

1.6.1. Subjective Methods

One of the more simple methods of forecasting sales is to use the judgments or opinions of knowledgeable individuals within the company. Such forecasts can use inputs from a number of different organizational levels. Probably the most common forecasts in use today are the forecasts made by executives.

1.6.2. Jury of Executive Opinion.

Some Firms begin with executive forecasts in what is known as a jury of executive opinion. Each of a number of executives makes an independent forecast of sales for the next period, usually a year. These forecasts are more than just guesses. Once the various executives have made their estimates, some method of reconciling the differences must be found. A better procedure is to bring the group of executives together to

discuss their estimates. The jury method has the advantage of simplicity and of representing a number of different viewpoints. The opinions are all apt to be influenced in a similar direction by general business conditions and conditions in the specific company

1.6.3. Sales Force Estimates.

Another common method of forecasting is by means of sales force estimates. If the process starts with sales representatives they may be asked to state the probabilities of selling various quantities of each product or product group to each present and prospective customer in their territories. This help will include projections of the general economic climate, activities of competitors, and the planned activities of the firm.

In some cases sales representatives may be given a forecast for their territories and asked to adjust it, or they may be given a range within which sales will probably fall and asked to indicate a most likely figure. It is likely that sales representatives can do a better job than can be done using more sophisticated objective methods particularly during times of great change. Use of the sales force to prepare forecasts has the obvious advantage of involving all sales representatives and making them feel responsible for achieving the sales target.

1.6.4. Objective Methods

Objective methods of forecasting are statistical methods that range in complexity from relatively simple trend extrapolations to the use of sophisticated mathematical models.

1.6.5. Trend Analysis via Extrapolation.

In this method the assumption is made that sales for the coming time period will be equal to the current level or that sales will change to the same degree that sales changed from the prior period to the current period. This forecasting method assumes that some past pattern in sales can be identified and measured, and that it reflects accurately what will happen in the coming period.

1.6.6. Regression Analysis. Regression analysis can be used in sales forecasting to measure the relationship between a company's sales and other economic series. Regression techniques enable the producers to estimate the relationship between changes in income and changes in car sales.

Regression analysis has the advantage of being more objective. If sales are related to a widely used series, forecasters have the advantage of many opinions in forecasting the other series. In general, regression forecasts are considered highly accurate for short terms such as two years or less.

1.6.7. Survey Methods. Surveys at the consumer level dealing with intentions to buy have not, as yet, contributed significantly to accurate forecasting. Surveys can, however, be used to obtain information that will be useful in making the forecast for example, the number of households owning and the number not owning a microwave oven may be useful to a microwave oven manufacturer.

1.7. SALES ANALYSIS

Sales analysis is a term used to mean analysis of actual sales results. Sales analyses usually are made on one or more of four bases territory, product, customer, and order size. The objective of these analyses is to find the areas of strength and weakness, the products that are producing the greatest and the least volume, the customers who furnish the most productive sales results and the size of order that is the most profitable.

1.7.1. Sales Analysis by Territory

It contains the following data essential to sales analyses: (1) customer s name, (2) customer s location, (3) products sold, (4) quantity of each item sold, (5) price per unit, (6) total dollar sales per product, and (7) total dollar amount of order. In some cases it may be desirable to add further information about the customer, such as size, type of business, user or wholesaler, chain or independent, and so on.

Thus, it will be possible to compare actual sales in a county with the county s market potential.

Both sales and market potential are then tabulated by territorial units. Those territories in which sales fall below potential can be given special attention.

1.7.2. Sales Analysis by Product

Over the years a company s product line tends to become overcrowded unless strong continuing action is taken to eliminate those items which no longer are profitable. By eliminating weak products and concentrating on strong ones a company can often increase its profits substantially. At one extreme a firm might classify products only by such

general groupings as industrial and consumer. At the other extreme, a firm might classify separately each product variation by color, size, and so on. Product analysis may be particularly effective when combined with territory analysis. Combined analysis of this type makes it much easier to spot the places where action should be taken.

1.7.3. Sales Analysis by Customer

Such analyses typically show that a relatively small percentage of customers accounts for a large percentage of sales. Distribution cost accounting should then be applied to determine the smallest customer it is profitable to keep on the books. By dropping customers smaller than the size, the firm can improve its profitability.

1.8. Self Assessment Questions

1. What is Market Potential Analysis? What are different Methods for Measuring Market Potential?
2. How you will carry Sales Analysis on the basis of territory, product and customer?

1.9 Suggested Readings

1. Boyd, Westfall and Stasch : Marketing Research
2. Green, Tull and Albaum : Research Decisions
3. Luck and Rubin : Marketing Research

UNIT – V

LESSON - 9

PRODUCT RESEARCH

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1.1 Introduction

There are a variety of estimates regarding the percentage of new product failures. Much depends on when a new product project is canceled. Differences in the various estimates of failure in the marketplace are influenced by how the new product is defined, the type of new product involved, and the criteria used to measure commercial success.

1.2. New Product Development Process

The essence of any firm's new product policy is the identification of those product opportunities that will generate, over a stated time period and that are compatible with the firm's resources. To attain the above objectives it is necessary to take the following steps:

- To develop an overall product strategy based on market needs, industry structure, and corporate resources.
- To develop a flow of new product ideas from a variety of sources.
- To develop preliminary procedures for screening new product ideas.
- To develop procedures for final screening.
- To develop product specifications with regard to optimum product attributes.
- To test the product.
- To test market the product.
- To commercialize and supervise the product through its life cycle and its termination or phase out.

1.3. Developing Product Specifications

It is necessary to determine that set of product attributes that are optimum for the market segment(s) to which the product will appeal. Much information should be available concerning those attributes that consumers believe should be incorporated in the product, both in terms of the level wanted and the relative importance of each. Many consumers provide conflicting views with respect to product attributes. The task of developing product specifications can be facilitated by linking the proposed new product to a group of prospective customers who have similar product attribute preferences. At the very minimum, marketing research should provide information pertaining to what features must be included in the product and the level and relative importance of each. Saliency measures of product attributes-both individually and in combinations.

1.4. Data Gathering Techniques

Useful data relating to product attribute preferences can be obtained by using paired comparison tests, rank orders, rating scales, or statements concerned with likes and dislikes. Paired comparison tests are typically used when the number of objects involved is small. When the number of possible pairs is large, rating scales are usually used.

Samples of the product with differing characteristics can be made up and tested using either rating scales or paired comparisons. Thus, such an approach enables management to gain insights as to what extent new products may outperform existing products, as well as to define relevant market segments. It is not necessary to use product samples to obtain preference data. Such research is often referred to as concept research and is useful in determining how prospective customers evaluate a proposed new product's attributes in light of the benefits claimed. Similarity scaling techniques can be used to "sort out" what product attributes are important to consumers. The simplest way is to ask consumers to specify the degree of substitutability between pairs of brands using a rating scale ranging from none to high.

1.5. Self-Reporting Models

This method involves asking consumers to specify which product attributes most influence their preferences. It consists of getting consumers to weight the importance of each attribute, usually via the use of scales—thereby profiling the ideal brand. Such a preference model helps identify benefit segments: that is groups of consumers wanting different mixes of product features. These groups, when properly quantified, represent market

segments that can be targeted by specific products. The advantage of this type of preference model is that it is easy to use-and inexpensive. It is most useful early in the design work or when the consumer choice process is relatively simple similar.

1.6. Conjoint Analysis

A second model involves having consumers evaluate products as bundles of attributes and provide information about the relative importance or trade off value of each attribute. If conjoint measurement is involved, then a disguised method is used to evaluate alternative products. In recent years conjoint analysis has been increasingly used to determine which combination of attributes is most wanted by various groups of customers.

1.7. Product Testing

On the basis of the information developed from the previous steps, management is in position to undertake research that will provide insights into whether they have been successful in developing the desired product. Management will, of course, test the product intensively in the laboratory whenever it is possible to simulate real-world usage conditions. It must be remembered that real-world tests are designed primarily to determine whether the product's physical attributes lead to satisfaction and preference. Another way to test new products is through panel of experts. This is often the case with foods where experts evaluate "taste". cases different recipes can be tasted to determine which is best.

1.7.1. Paired comparison Tests

When the new product is designed to replace an existing one, or when the product's competitors can be readily determined, blind paired-

comparison tests can be employed. Consumers are asked to use both products and then to choose the one they like most. If it asked to test several different product variations, a number of comparison tests must be carried out. Each variation is to be tested against each other variation. Respondents have different pairs at different times. If respondents are asked to compare several different product designs at one time, the results obtained may be misleading.

From the above, it is likely that the results of blind-paired comparison tests will be difficult to analyze. These tests can not replicate the choices available in the marketplace. Second, the use situation is artificial in that the housewife tries two products. Third, the statistics obtained from the tests may be misleading or ambiguous. And, finally, in selecting A over B a respondent may be stating a preference.

The simplest type of paired comparison test is that in which the respondents are given the test product in an unidentified package and asked to try it and to compare it with the product they are using. Such a test is not a satisfactory one. This may be a result of the respondent's desire to please the researcher. In any case, biased results are likely to be obtained. A better approach is to have respondents try two "masked" products and of termed interviewer may returns to get a preference rating and to find out what attributes were liked or disliked in each product. Much the same procedures described above can be used to test consumer durable and industrial products, assuming actual usage conditions can be simulated realistically.

1.7.2. Staggered Comparison Tests

Such tests are similar to the side-by-side comparison tests. Staggered comparison tests have many of the disadvantages of the paired comparison tests. In practice, however, there is little difference in the results obtained by the two tests.

1.7.2.1. Difficulties in Conducting Paired Comparison Tests

In appraising the paired comparison technique, it is important to keep in mind some basic weaknesses that reduce the confidence one should have in the results. Even so, the sample may be biased because some people will not participate. Another difficulty comes from the fact that the test can never simulate precisely the conditions in the marketplace under which buying decisions are made. It is doubtful if respondent statements about how much more they would be willing to pay for a given product are very meaningful. There is further question of how valid the findings are relative to actual behavior. Participants in a consumer test assume that differences exist among the test products and that their job is to find them. Consumers are inconsistent in their preferences over a number of trial uses. The consumer behavior in preference tests should be viewed as probabilistic versus deterministic. This implies that the less the differences between the test products the greater the instability of the test results. Order bias in paired comparison tests poses yet another problem. Further, there is evidence that, the greater.

1.8. Disguised Comparison Method

This type of study attempts more nearly to duplicate actual market conditions in the test situation without actually being a sales test. The

interviewer ascertained whether both packages had been used. Following this, the respondents were given several opportunities to indicate whether any differences had been noted. If no differences were volunteered, non-disguised questions on differences were asked. These findings suggest the possibility that the other two techniques provide an exaggerated picture of product differences. Thus, while variations of the paired comparison technique possess characteristics of value to researchers, their failure to fully reproduce the real world is still a severe limitation.

1.9. Test Marketing

Test marketing is a procedure by which a company attempts to test on a small basis the commercial viability of the marketing plan for a new or modified product or package. Such a test has a twofold purpose: it is designed

- (1) to provide a reasonable estimate of the sales and profit potentials in the new product, and
- (2) to help management identify and correct any problems having to do with the marketing plan. It is important to note that test markets are seldom used to test whether a product is acceptable or not acceptable to the consumer.

1.10. Pretest Market Research

Pretest market research methods, while no substitute for test marketing, can provide important diagnostic information about a new product and its likelihood of success faster than a full-scale test, and at a lower cost. This means that a well-run pretest market rejects poor products fairly and consistently. To be successful, the methods used must focus on

the process by which consumers adopt a new brand- namely, awareness, trail, and repeat buying. While the more successful methods are primarily concerned

1.11. Laboratory Test Markets

One low alternative to traditional test marketing is the laboratory test market. For packaged consumer products, where respondents buy products under controlled conditions, and of auditorium-like facilities, where respondents are exposed to advertisements and other promotional materials.

With longer follow-up periods, more repurchase situations can be analyzed, which increases the accuracy of the test results. The above process assumes that the consumer's behavior throughout the test is "realistic" because she was forced to pay money for both the initial and repeat purchases. No matter the safeguards used in attempting to control the environment properly, realism can never be totally assured.

Industrial goods can be tested in a number of ways, including trade shows, in-use situations, and sales presentations. The first method consists of displaying and demonstrating possible buying intentions. In-use tests place the product with a sample of potential buyers who agree to try it and to provide an evaluation of its performance. Pretest market forecasts for consumer durables can be obtained from laboratory research in much the same way as discussed above.

1.12. Full-Scale Test Marketing

The nature and extent of such research depends largely on how much confidence management has in its proposed national marketing plan.

Companies frequently make the mistake of planning the test-marketing operation first and later expanding it into a national plan.

The ultimate objective of any market test is to obtain an estimate of sales for at least the first year of national operation for some level of promotional expenditure. The market-test-research design should break down such data by type of promotional expenditure as well as by level of expenditure. Different levels of advertising intensity can also be tried and their effect on sales measured. It should also be noted that the more variables to be tested, the more difficult and expensive the test marketing will be.

1.13. Determining the Length of a Test Market

In general, the test should last long enough to permit buyers who have purchased the product once to make at least three repurchases. Lies in the measurement of repeat purchases. Advertising and promotion are virtually indispensable in persuading people to try a new consumer product, but then the product characteristics themselves become dominant—that is, repeat buying measures the degree to which the product lives up to the expectations aroused by the promotional program.

1.14. Deciding What to Measure:

The research should attempt to measure a number of other variables as follows:

1.14.1. Repeat Purchasing: A measurement of repeat purchasing is probably the single most important item of information to obtain in a test market. The important question, however, is whether a substantial portion of the people who try it become loyal customers. With such a panel the

purchasing activities of the sampling units can be studied over a time period, and the extent of repeat purchasing can be determined.

1.14.2. Advertising Effectiveness: It is important to determine the rate at which target consumers are made aware of a new product, the amount of time they retain the message, and the degree of knowledge they possess about the product's characteristics, because these factors affect the rate of adoption and the rate of subsequent purchases.

1.14.3. Effectiveness of an Introductory Offer: The effectiveness of this offer can be determined by ascertaining whether consumers know about it and whether they availed the opportunity or not.

1.14.4. Effectiveness of a Trade Offer: The effectiveness of this offer can easily be judged from information provided by the sales force. The sales force can also report on any other difficulties experienced in getting cooperation from the trade.

1.14.5. Share of the Total Market: It is also essential to discover the effect of the new product on total sales to the product class.

1.14.6. Characteristics of buyers: These data are essential in estimating future sales. The data on the "Characteristics" of households provide clues as to what audience groups are buying and to what extent.

1.14.7. Reasons for Not Adopting of for Discontinuing Usage: It should be possible to locate consumers who fall into various user categories and then to interview them in depth.

1.14.8. Selection of Test Markets: The selection of the appropriate test markets is difficult. It is reasonable to assume that, as the number of

test markets increases, the reliability of the results also increases, if only be decreasing the chances of extreme errors.

1.15. Criteria to be followed

The following criteria are typically used:

- The markets should not be “overtested.”
- The markets should be “normal” regarding the historical development of the product class involved.
- The markets should be typical regarding the competitive advertising situation.
- No single industry should dominate the markets.
- The markets should so represent different geographical regions.
- Markets that contain groups not normal to the product’s target should be avoided.
- The markets should have a media pattern similar to the proposed national media plan.
- The markets should not to be too small to provide meaningful results or so large that the testing becomes unusually expensive.

1.16. Projecting the Results:

Usually, it is difficult to project the results in such a way as to provide an accurate estimate of the first year’s sales. To make such a projection for a frequently purchases product, it is necessary to know the rate at which consumers are first attracted to try the new product, the number of first buyers who buy a second time, the number of second buyers who buy a third time, and so on.

1.17. Electronic Test Markets

Test market data are obtained using a variety of search instruments,. Increasingly, companies are using electronic mini-market tests that not only reduce the costs of a traditional test market project by as much as a third but provide the needed data more quickly. Such “high-tech” research methods generate single-source data. The result is a measure of the impact of one or more marketing variables such as advertising copy, price, and a particular type of consumer promotion.

A major problem with this type of testing is that it provides little information on trade response. Further, because store displays are set up and maintained the ideal way throughout the test, consumers are likely to sample the product at a faster rate than would normally happen, because of these trade problems, some companies supplement electronic testing with a traditional-type test market.

1.18. Summary

Marketing research can provide important help in the design of new products. Too often, individual firms fail to provide the proper balance between technical and marketing research. In determining the attributes of the optimum product, the research must determine which attributes are important and the relative importance of each. A number of different techniques can be used to obtain the importance of the various product attributes.

All major types of consumer-use tests are flawed in that they fail to duplicate actual market conditions. In both situations, the fact that respondents know they are participating in a test and that they are expected

to find differences can lead to the reporting of exaggerated differences. In recent years, more use has been made of pretest market research in product research. Respondents would then be told the brand name of their product and the retail price involved, and again asked to state their purchase intentions.

1.19. Self Assessment Questions

1. Explain in brief New Product Development Process.
2. What are different methods of Product Testing?
3. Explain in brief different data gathering techniques.
4. What is Test Marketing? What are different techniques used in Test Marketing?

1.20 Suggested Readings

1. Boyd, Westfall and Stasch : Marketing Research
2. Green, Tull and Albaum : Research Decisions
3. Luck and Rubin : Marketing Research

UNIT – V

LESSON - 10

ADVERTISING RESEARCH

1.1. Introduction

1.1.1. Other Objectives

1.1.2. Advertising Objectives and Product Appeals

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1.8. Self Assessment Questions

1.9 Suggested Readings

1.1. Introduction

Basic Marketing research techniques, apply to advertising research. Many ingenious adaptations. Awareness is often used as a summary measure of advertising success in attracting attention.

It is important to mention here that more than a single measurement is needed to determine the advertisement effectiveness in his marketers need to evaluate attitudes toward their product's characteristics as well as toward competing brands. Such measurements give some indication of

specific attitudinal changes. The goal advertising can be stated in terms of changing consumer attitudes towards selected product characteristics. This assumes that attitudes are predictors of behavior. They can be measured with some reasonable degree of accuracy. Measuring attitudes is difficult. The idea of using attitudes has great appeal because of its presumed link with behavior. Thus, many advertising effectiveness measures recognize the importance of attitudes and work directly or indirectly to measure them.

This summary measure used to compare the effect of different ads.

1.1.1. Other Objectives

There are many objectives that can involve advertising. One checklist for developing advertising objectives cites some these techniques have been made by advertising researchers. It is desirable, therefore, to study in detail some of the various types of advertising research. In addition, a number of specialized research agencies provide information on advertising.

This chapter is divided into three major parts. The first part covers advertising objectives and product appeals. The second part discusses copy testing. The third part deals with media selection.

1.1.2. Advertising Objectives and Product Appeals

Advertising objectives should be stated in terms of sales or profits. This is difficult given that advertising is only one of the input variables. It interacts with other controlled and uncontrolled variable that influences sales and profits.

The advertising objective relate to consumers behavior must be influenced to obtain a sale. Behavior, in turn, is a function of a complex process. The objective of advertising is to trigger behavior. The communication attract the attention of the large group. It motivate all

concerned that the product can meet their needs better than alternative products.

1.1.3. Attitude Measures

The use of attitude maintenance as result of advertising effectiveness has grown importance. This resulted from product positioning, in which product benefits serve as the basis for market segmentation. To achieve any objective, the communication should satisfy several requirement.

Advertising objectives can also be classified as per their objective in terms of informing, persuading, or reminding. Persuading objectives include attempting to build brand preference and loyalty and changing a consumer's attitudes about a particular brand's characteristics.

1.1.4. Copy Testing

Copy-testing research seeks to evaluate alternative ways for advertisers. This is a critically important area. Substantial miscomprehension occurred across all age, income, and education groups.

The Use of the word copy is perhaps unfortunate. It seems only to refer to print media. The copy will refer to an entire advertisement, including the verbal message, pictures, colors, and dramatizations.

The advertisement appears in print, on radio or television, or via some other medium.

Copy-testing research has received considerable criticism in terms of the low validity. The reliabilities associated with the more common copy-testing measures. One major problem is that most such techniques of an advertising campaign based on a single exposure of one commercial.

1.1.5. Copy-Testing Measures and Methods

There are many different copy-testing methods. Which one to use depends upon what assumptions that how advertising works and what are

its objectives. If the objective is to persuade, then a measure of purchase intent will be used. If attitude shift is what is wanted, then scales will be used to measure change. To test advertising copy the researcher must know that what the copywriter is trying to accomplish and what assumptions are being made.

Measures dealing with recognition, recall, comprehension, believability, persuasion, and attitude change are the more typical measures used to judge advertising effectiveness. One of the basic problems is that most research cannot measure the long-term effectiveness of advertising.

Pretests are designed to determine what weaknesses exist in the copy. After or posttesting attempts to measure the combined effect of the advertising, the media used, the scheduling, the product's distribution, and competitive advertising. Such tests are an attempt to simulate the real world and, thus, are properly classified as pretests.

It is necessary to describe briefly the research needed to determine what creative strategy to adopt.

1.2. Creative Strategy Research

A product's creative strategy is concerned mainly with determining what message can best illicit the desired response from members of the target audience. It should specify the product's target audience and desired response in some detail. Once this has been done, a decision must be made to communicate. This requires the use of marketing research to measure the impact of the idea on which the message is based.

It is difficult to evaluate concepts concerned with emotional appeals versus benefits derived from physical product features.

Focus group discussions provide important insights into the relative importance of various concepts. A skilled moderator gain in-sights into why consumers prefer one brand to another. It signifies that how

consumers think about advertising for a given product. There is always a question of the reliability of a focus group's output, not only because of bias introduced by some of the more members of the group, but because of its small size and lack of representation of the target audience.

1.2.1. Before Tests

1.2.1.1 Consumer Jury.

This testing method is one of the oldest one. It provides a "rating" by a group of consumers who represent potential buyers of the product. Personal interviews may be used and the members are asked to vote on the alternatives. Respondents are then asked to rank the alternatives according to their preferences or interest in buying the product. It is assumed that respondents will always like at least one advertisement. The validity of the consumer jury method of copy testing leaves much to be desired. There is little evidence that judges-regardless of their advertising expertise-are able to select those advertisements that will have the greatest impact

1.2.1.2 Rating Scales.

These can be used by "rate" alternative ads. Their use requires the establishment of standards for effective copy and numerical weights for each standard. Ads are then rated in accordance with the scale values and a numerical score obtained. The major advantage of a rating scale is that it provides a list against which to check an ad and helps to single out the elements of an ad that are good and bad. The disadvantages are: it is difficult to set up relative weights regarding their contribution to the "idea" ad. The different judges will rate the items differently, leaving the question of who is right; and high scores may not be an indication of success.

1.2.1.3 Portfolio Tests.

These tests are named after the manner in which the advertisements to be tested are packaged. A group of ads, is placed in a portfolio.

Respondents who are thought to be representative of the target audience are given the folio and asked to go through it. After completing this task, the respondents are asked to recall the ads that they can remember. Such recall may be on unaided basis. The interviewer may recall by asking about specific ads. The respondent is asked to play back possible. Additional questions may be asked about such things as the believability of the claims in the ad general reaction to the ad, and whether the respondent uses the product.

Frequently, the portfolio test is used to test the merits of two or more alternative ads. An experimental design is used in which two or more sets of folios are prepared. Finally by using small matched samples and comparing recall and playback scores among the various groups, a “winner” is obtained.

1.2.1.4 Psychological Tests.

These tests are related to the tests already discussed. Advertisement effectiveness depends on the results achieved in the mind by the advertisement. One could set up a list of the reactions that might result from a given advertisement. Alternative advertisements could then be rated on how he responded with respect to those reactions.

Psychological tests employ a variety of research techniques, including word association, sentence completion, depth interviewing etc. The major objective is to find out what respondents see in various advertisements. Such studies can be undertaken either before or after the advertisement run. These are difficult studies to implement. The Content needs to be developed by a trained individual and the results are difficult to interpret.

1.2.1.5 Physiological Tests.

Such tests have prevailed over the years because of their potential for providing objective responses to identifiable stimuli. Two of the older

ones are the response and the eye movement test. The former device similar to the polygraph machine, which is used in detection. The respondents are linked by electrodes to a monitor and are exposed to a number of stimuli in the form of test. The monitor records the impact of these ads on the nervous system by measuring the amount of perspiration occurring on the hands. This method has not played an important role in copy testing. Aside from the problem of sample size, there is a question of what is being measured.

The eye camera is a device that records continuously the activity of the eye. By analyzing the researchers can determine what part of the advertisement attracted the initial attention. What was interesting in it, and whether there was any part, which appeared confusing. It is difficult to correlate eye action with what readers are thinking. The basis of this test is that the pupil dilates when respondents receive an interesting or pleasant stimulus. By comparing the changes induced by a message against the base line produced through the use of neutral stimuli, a measure of effectiveness can be obtained. Another device is the tachistoscope, which permits researchers to control the amount of time that an advertisement is exposed to a group-or to an individual. This permits researchers to study perception under given time conditions.

1.2.2. Inquiries.

Some advertisements are designed to produce direct results, such as sales or inquiries, in such cases, of the advertisement's "worth."

An Inquiry tests may be conducted in several ways.

- The same offer may be placed in different pieces of copy placed in different issues of the same medium. Assuming that all other factors remain constant between issues.

- The same offer is placed in different advertising copy that appears in different magazines or newspapers. The assumption is that differences between media are either negligible or can be corrected.
- The same offer is placed in a medium that provides a split-run service. This is accomplished in a systematic way so that the two pieces of copy reach similar audiences.

It must be remembered that a large number of inquiries does not mean that the advertising is successful unless inquiries are the sole advertising objective.

1.2.3. Sales Tests.

Such tests can be conducted using a variety of experimental designs. They are sometimes done as part of a test marketing program, such tests have important limitations: they measure only short-term effects. They are time consuming; it is hard to hold “all other” factors constant; and they are quite expensive. Sales tests may be simulated in a variety of ways. Product sales would be measured in each store before and after the introduction of the appropriate display. The changes in sales between the two periods for the two store samples would be compared. Similar experimental design studies can be conducted by mail, using coupons. A somewhat similar test involves the use of two matched groups. Using proprietary technology, test commercials are substituted for control ads at the individual household level within the normal viewing environment. Samples are selected, based on their purchase behavior history. The problem with such a service is that it is difficult and expensive to use in the early stages of copy design.

1.2.4. Day-After Recall Tests.

Such tests consist of an on-air exposure of a finished commercial in one or more cities, following which several hundred viewers are interviewed by phone to determine if they can recall the message Based on

their answers, a recall score is derived. On this basis, the commercial is either accepted or rejected.

The advantage of this test lies permits the use of proper sampling methodology. But there is some question about its reliability. They also seem to be sufficiently sensitive to be able to discriminate between two or more commercials dealing with the same brand. In addition to being asked about their exposure. The viewers are asked four questions, as follows:

- Would you describe the commercial?
- What did this commercial make you think of?
- What was the main idea the commercial was trying to get across?
- Which brand of was being advertised?

A favorable response would refer not only to the commercial but to the advertised product as well. In particular, what one is looking for is some indication of personal involvement Some researchers add persuasion, belief, and intention-to-buy questions in an effort to gain greater insights into the simple recall data.

1.3. After Tests

It is impossible to measure the effects of the message separately, since the results are confounded by the frequency of the media schedule, the impact of the medium used, and other market factors.

“After tests may be designed in a number of ways. All, with the exception of inquiry and sales tests, are based on the respondent s memory. A copy test based on a single viewing of a TV commercial will not provide an accurate measure of the ad s performance.

1.3.1. Recall Versus Recognition Tests.

Is a considerable controversy concerning the relative merits of these two measurement methods of collecting data pertaining to the readership of print ads. By recall is meant ... the mental reproduction of some target item experienced or learned earlier.... Operationally, some contextual cue is provided, and the respondent must retrieve the target item from memory. Recall tests of advertisements typically cue the respondent as to the specific media vehicle as well as the product class. Given such cues, the respondent is asked to play back of the ad. The same approach, but with modifications, can be used with TV and radio commercials. This type of testing yields low response rates only a very few respondents can recall having seen an ad.

Recognition tests are used primarily with print ads. The critical is that the person is given a copy of the information he or she needs to find in memory. In the typical advertising recognition test, a respondent is shown a series of ads to which the respondent has been exposed. The subject is then queried as to whether or not she or he has even seen the particular ad. If an advertisement is reported as noted, the respondent is asked to indicate what parts were read. From the very beginning recognition tests have been plagued by many limitations like response bias. Many respondents falsely claim to have seen an ad that they could not have seen since the ad had not run. As a result of studying recall versus recognition measures it has been concluded that recognition tests generate poorer measures of memory than recall test.

1.4. Media Selection

The goal of the advertiser is to select a media schedule from among the many available alternatives that will maximize some combination of the number of people reached and the frequency with which they are reached. They must decide

- (1) What frequency of message exposure is desired in order to effect a change in behavior
- (2) The maximum number in the market segment that can be reached. The greater the frequency desired.

The problem of media selection is complicated because not only is it necessary to choose among major media types, such as newspapers, billboards, magazines, radio, and television etc. If magazines are chosen, specific magazines and even issues must be selected, ki radio and television there is not only the question of what networks or stations, but what programs, what day or days of the week, and what time of the day.

There is little doubt but w at the character of a media vehicle will influence advertising effectiveness. The problem is that it is almost impossible to identify and weight such factors for alternative vehicles at the time the advertising is scheduled. Some persons are better prospects than others because they consume greater quantities of the product type. The Advertising Research Foundation suggests that, following the elimination of non-prospects, the media, analyst pay attention to the six levels

- Vehicle distribution. This refers to the individual medium's circulation.
- Vehicle exposure. This deals with the exposure of people to the vehicle.
- Advertising exposure. It involves the advertisement. It requires that the message physically come within the audience's attention range.
- Advertising perception. This requires that the audience has conscious awareness of the advertisement.
- Advertising communication. The audience receives the message in a desired context.

- Sales response.

1.4.1. Audience Measurement Problems.

There are other problems which can be discuss:

- The variations in the composition and size of the audience of a given media vehicle over time.
- The variations due to geography
- The variations resulting from the rate at which different vehicles accumulate audiences.
- The difficulty of estimating the value of different sizes of message units within and between media.
- The actual geographical area covered. This is particularly difficult with electronic media.

1.4.2. Media Scheduling

Given the cost of single ads the decision of what level of repetition to use in advertising a product is critically important. Low repetition consists of three or four exposures during the product s purchase cycle, which for most household packaged products is about four weeks. Since advertising is forgotten over time, there is also the question of whether a pulsed or burst schedule should be used in contrast to one using constant spending.

1.4.3. Media Audiences

In the case of print media, the audience is typically defined as being comprised of individuals who say they have seen one or more major editorial features. With television and radio, the audience can be defined in various ways, such as sets tuned to a program or number of people listening or watching.

1.4.4. Print Media.

For newspapers, circulation is broken down by daily and Sunday editions. For magazines, circulation data are shown by census regions and city-size groups. But circulation does not provide information about the number of readers. The problem of so doing for a given publication is a most difficult one. How does one define a reader? There is also the problem of when to interview respondents in media studies, since exposure is cumulative. To interview late means that some who were exposed will forget. This is particularly true with certain magazines having a long readership life. Another problem is what issue to study. Because of the cost involved, only a very few issues are studied in a given year despite the fact that readership of individual issues varies widely.

To confound the problems cited above, the act of reading certain has a status connotation which affects reported readership. Because of all the above problems coupled with the use of relatively small samples, it is not surprising that there can be differences in the by different services. Since consumer readership of three or more magazines is quite common, the problem of duplication is an important one; but rarely are data available showing the duplication among three or more magazines.

1.4.5. Radio and Television.

Radio and television are very different from magazines and newspapers. Such media have no visible trace. The program and the advertising message are often mixed. There are four basic ways to measure the size of the audience.

1.5. Coincidental Method.

This method is based on a sample of homes, using the telephone to solicit responses about what radio and television programs are being listened to or viewed. Typically, respondents are called and asked whether anyone in the home is listening to the radio or viewing television, and, if

so, to what program and station they are tuned. This method measures average audience on the assumption that calls are spread evenly throughout the time of the program. It has some limitations, First, the results may not be valid, since only homes with telephones are included. It is usually not economically feasible to obtain a sample of rural homes. For these reasons, the total size of the audience cannot be estimated accurately.

A second difficulty is that such procedures do not produce any continuous information about the audience. There may also be a tendency on the part of some respondents to report they are viewing a more socially approved program than they are.

1.5.1. Roster Recall.

This is a technique that consists of aided recall via personal interviews. The interviewing is done shortly after the particular time period to be measured has been completed. A list, or roster, of programs by quarter hours is used to aid respondents in remembering what programs were listened to or viewed.

1.5.2. TV Meters.

The following data are reported:

1. Total audience number and percent of television homes tuned to each program.
2. Average audience equivalent to the number of television homes tuned to the full program.

3. Share of audience =
$$\frac{\text{Number of homes watching a specific program}}{\text{Number of homes watching any program at that time period}}$$

Data can be broken down by such household characteristics as region, city size, age of male head, total family income, and presence of children.

Despite the objectivity of such a system, it suffers in that it does not indicate whether a program is being viewed and, if so, by whom.

1.5.3. Diary Method.

This method obtains estimates of listening or viewing by having respondents record in a specially designed diary their radio listening or television viewing or both. If this assumption is valid, then the diary method has an advantage that of obtaining data on individuals viewing programs. Even so, the diary cannot provide a precise minute-by-minute audience flow as does the audiometer.

A major problem with using diaries is that many panel members do their recording of programs watched only once a week, and, thus, popular programs are over-reported. This over-reporting can be explained largely on the basis of the halo effect present with highly popular shows, which respondents report viewing more often than is true.

1.5.4. People Meters.

Since both passive meters and diaries have audience measurement problems, it is not surprising that considerable effort has been made over the years to find a better system. The most recent technological breakthrough is called a People Meter a remote controlled box with buttons that send signals to a small control box on top of a TV set. Each household member pushes his/her assigned button every time (s) he starts or finishes watching TV.

1.6. Media Models

Almost all media models basically seek to maximize some measure of advertising exposure which is assumed to impact on sales. In brief, such models report, for a given advertising schedule, the number of individuals or households exposed and the number of times they are exposed. Since different schedules have different costs, the exposure output can be divided by the costs involved to obtain an effectiveness ratio. Some models

provide reach) and frequency of exposure for each media schedule. Others stipulate that advertisers state their objectives in terms of reach and frequency by target segments. In the case of the latter, the model output consists of a recommended media schedule by media vehicle, by time period, and by number of units purchased. Many advertisers obtain media exposure data that can be tied directly to brand usage. Such data clearly facilitate the selection of a media schedule, since a target audience can be selected and its exposure to various media vehicles can be determined as well. In spite of the apparent advantages of media models, they are handicapped by a lack of precise input data, especially with regard to current data pertaining to exposure effects, communications effects, forgetting, and response functions.

1.7. Summary

The field of advertising has received considerable attention from research workers various which has to be addressed to be:- What should be said about the product? What is the best way to put these appeals into words and pictures? What media should be selected? It is doubtful that any single technique will be developed that will answer these questions satisfactorily.

Copy testing is designed to determine the best way of presenting the selected appeals. There are two major kinds of copy tests-“before” and “after.” If the objective is to make improvements in the copy before it is released on a full-scale basis, the test used is classified as a before test. The different kinds of before copy tests are (1) consumer jury, (2) rating scales, (3) portfolio tests, (4) psychological tests, (5) physiological tests, (6) Injuries, (7) sales tests, and (8) day-after recall. Similar techniques are used in some of these tests, so the differences are more a matter of degree than of kind. The two types of after tests are (1) recall and (2) recognition.

In selecting media, the objective is to find the most efficient vehicle for carrying the message to potential buyers. If advertisers are using more than one medium, they are faced with the problem of duplication.

Duplication studies are based primarily on qualitative differences in media and are of value in helping to narrow down the alternatives in the media selection program.

1.8. Self Assessment Questions

1. What are the major problems a manager faces in attempting to set measurable advertising objectives?
2. What specific measure would you recommend using as an objective?

1.9 Suggested Readings

1. Boyd, Westfall and Stasch : Marketing Research
2. Green, Tull and Albaum : Research Decisions
3. Luck and Rubin : Marketing Research

UNIT V

LESSON - 11

RESEARCH PRESENTATION AND RESEARCH PROCESS

EVALUATION

1.1 Introduction

1.2. Written Research Report

1.3. Adhere to the study objectives:

1.3.1 Be Selective

1.3.2 Be Objective

1.4. Have Purposeful Organization

1.4.1. Title Page:

1.4.2. Table of Contents:

1.4.3. Foreword:

1.4.4. Statement of Objectives:

1.4.5. Methodology:

1.4.6. Research Design.:

1.4.7. Data-Collection Methods:

1.4.8. Sampling:

1.4.9. The researcher should describe the size of the overall sample and should explain the reasons for their sizes.

1.4.10. Fieldwork:

1.4.11. Analysis:

1.4.12. Limitations:

1.4.13. Limitations may be of several types.

1.4.14. In describing the limitations of the study, researchers should point out the degree to which they could affect the results.

1.4.15. Findings:

1.4.16. Conclusions and Recommendations:

1.4.17. While it is almost always necessary for the researchers to draw conclusions,

1.4.18. Appendix:

1.4.19. Summary Report:

1.5. Evaluation of the Research Procedure:

1.6. Summary:

1.7. Self Assessment Questions

1.8 Suggested Readings

1.1 Introduction

Quality of the research undertaken depends on the way they are communicated to the relevant audiences. Standards for researchers are apt to be different from those of executives to whom they wish to communicate. Researchers must make their presentations technically accurate as well as understandable and useful. The research steps makes the research presentation easier to prepare. All steps, anticipate the presentation. If the overall problem is clearly specified, then the framework of the presentation has been largely predetermined. The process communicating the result is never automatic. It is difficult to visualize a successful presentation originating from a study in which the objectives were not clearly defined.

Finally the researchers will be required to make both an oral and a written presentation.

1.2. Written Research Report

Two people can never prepare a report in exactly the same way to whom the report is addressed should conspire to give report a unique flavor. The following principles should be kept in mind.

Many reports fail to achieve their objectives because the writers failure to understand the nature and capacity of these individuals, their interest, or lack thereof, in the subject area; the circumstances under which they will read and evaluate the report.

The researchers often tend to write reports as if they were intended for other technical persons. They tend to discuss the research problems involved in the project and to use the technical terms common to them but not to the reader.

The researchers should every effort to acquaint themselves with the specific preferences. They should not consider these preferences unalterable, but deviations should be made with reason not from ignorance.

Different readers may present conflicting demands. This problem of conflicting demands has no easy solution therefore the researchers have to be aware of such conflicts and use their stall to reconcile them.

1.3. Adhere to the study objectives:

A good research should always be confined to achieve certain results consisting primarily on the both of objectives. There should not be to report the findings without reference to the objectives. Therefore the researchers requires to be on intimate terms with the problem. It the

management group has not permitted the researchers to participate in formulating the problem and has either handed down the problem then it will be difficult for report writers to draw conclusions and make recommendations under these conditions.

1.3.1 Be Selective

If an attempt has been made to include too much there is always a fear that the important points will be lost in the detail. Therefore, it is important to exclude unnecessary things. The researchers must use their judgment in deciding what can be omitted. The reasons for using certain techniques to reach conclusions and to give recommendations for action often take a lot of space to explain. If explanations are not given, the reader may conclude that the research was not conducted carefully.

1.3.2 Be Objective

The researcher should at all times retain their objectivity. It is one thing to sell objective results to present results that have been slanted to make them salable. Further more the researchers should have enough courage to present and to defend their results if they are convinced the results are sound. But it is hard to conceive of a solid research reputation being established on such a basis.

1.4. Have Purposeful Organization

The objective of the report is to give the reader the overall “picture” in the shortest possible time. Therefore each word should be written with the thought of entire report in mind. Readers should also be conscious of the organization that at any time they know where they are in the report and where they are going.

Write Clearly

It is easy to say “Write Clearly,” but this is difficult for most people to accomplish. Despite this subjectivity, some basic principles can be itemized which are discussed as under

- Use short, to-the point sentences-avoid sentence structures that are too elaborate.
- 2 Avoid too many difficult words. The prime purpose of the report is to communicate the results of the study-not to impress the reader.
- Express precisely what the writer wants to say.
- Avoid mechanical flaws such as incorrect grammar.
- Be sure that the report has uniform style and format.

The Report Format

There is no one hard and fast rule for reports. However, the physical format can be employed to create desirable emphasis and clarity. The use of widely spaced paragraphs, varied margins, separated headings, different type sizes, and colors. A report must use the format that best fits the needs and wants of its readers. The following format is suggested as a basic outline that has sufficient flexibility to meet most situations.

- Title page
- II Table of contents
- Foreword
- Statement of objectives
- Methodology
 - A. Research design.

- B. Data-collection method.
- C. Sampling.
- D. Fieldwork
- E. Analysis and interpretation
- Limitations
- Findings
- Conclusions and recommendations.
- Appendix
 - A. Copies of forms used
 - B. Details of sample with validation
 - C. Tables not included in findings
 - D. Bibliography, if pertinent

Each of these items is discussed briefly in the following paragraphs.

1.4.1. Title Page: The title page should indicate the subject, the date the report is prepared, sometimes it is not necessary to specify for whom the report is prepared, while at other times it is wise to indicate this precisely. Some research reports are confidential.

1.4.2. Table of Contents: It is usually desirable to have a table of contents. The report should includes numerous charts, graphs, and tables, it is desirable to include a list of them immediately following the table of contents.

1.4.3. Foreword: It should give the background of the problem, the importance of the problem; the various dimensions of the problem.

1.4.4. Statement of Objectives: The reader must know exactly what the report covers. It is desirable to state the overall problem and the problem

solution process. Sometimes, it may even be wise to provide some background information on how the problem arose and what previous research work, if any, has been carried out.

1.4.5. Methodology: This includes the overall research design, the sampling procedures, the data-collection method, and the field methods and analysis procedures. It is hard to discuss methodology without using technical terms, which the reader may not understand technical language.

1.4.6. Research Design.: A description of the research design should make it clear whether the study is exploratory or conclusive in nature. In describing the research design, the researcher must explain why the particular design was used-what its merits are for the project at hand.

1.4.7. Data-Collection Methods: The researcher must explain why the method selected was appropriate for the project. A copy of the questionnaire or form for recording observational data may be included here. The researchers clearly defined whether the data collected from secondary source or from primary source.

1.4.8. Sampling: The exact sampling units, must be defined and the geographical limits should be specified. If there were any difficulties in identifying the sampling units, the methodology used for overcoming difficulties should be explained.]

1.4.9. The researcher should describe the size of the overall sample and should explain the reasons for their sizes.

1.4.10. Fieldwork: The researcher needs to tell readers to give some idea of the accuracy with which the work was done. This will usually include a description of the number and type of field-workers used; how

they were selected, trained, and supervised; and how their work was verified.

1.4.11. Analysis: The little can be said about the analysis and interpretation methods. The findings tend to show what has been done in this regard. This may help gain acceptance of the report; and it can help readers appraise the interpretation given.

1.4.12. Limitations: A good report “sells” the results of the study, but it should not oversell. Every project has limitations. This helps readers form a more accurate interpretation of the results than they would otherwise do.

1.4.13. Limitations may be of several types. One that should always be emphasized is the degree to which one may generalize from the results. If the study is an exploratory one designed to find new hypotheses, readers should be warned not to conclude that the results are an accurate measure of the phenomenon studied.

1.4.14. In describing the limitations of the study, researchers should point out the degree to which they could affect the results.

1.4.15. Findings: Findings are the results of the study. Summary tables and graphic methods of presentation should be used liberally. The specific objectives of the study should be kept in mind and findings presented with them in view. The list of information needed to achieve the objectives, which was prepared in the problem formulation step, should limit the scope of the findings presented.

1.4.16. Conclusions and Recommendations: Conclusions should be drawn with direct reference to the objective of the study. The readers should be able to read the objectives and find specific conclusions.

1.4.17. While it is almost always necessary for the researchers to draw conclusions, it is not always possible or advisable for them to make recommendations. Making recommendations assumes considerable knowledge of the total picture, including the resources of the firm and all the alternative courses of action.

1.4.18. Appendix: The purpose of the appendix is to provide a place for those report items that do not fit in the main body of the research report because they are either too detailed or too specialized.

1.4.19. Summary Report: The report format suggested above does not contain any summary section. This exclusion is deliberate. A summary, however, is usually prepared. Its objective is to present the highlights of the complete report so that executives can get the main ideas quickly. In other instance, the summary is attached to the full report.

Report writers often place the summary at the beginning of the findings section, the findings sections is broken into two parts: (!) the summary, and (2) the detailed account of the findings. When the summary is made the first part of the report, the objectives, abbreviated findings, conclusions, and recommendations are included in it.

1.5. Evaluation of the Research Procedure:

Immediately following the writing of the report, the efficiency of the research project should be evaluated. An analysis of the findings would give some indication of the accuracy of this assumption. Such data on

variance-even if only a rough approximation-will help in the planning of future studies and will enable the research workers to obtain greater efficiency.

Research work lends itself to experimentation, and researchers usually have an opportunity to do some experimentation, and researcher usually has an opportunity to do some experimentation in each study they conduct. The two groups of interviewers would then be compared to determine whether any significant differences resulted. Since the two groups were equated in advance by the use of a random-selection method, any differences would be due to either the quiz or to random-sampling fluctuations. Significance tests would then determine whether the differences could be explained entirely by sampling variations.

1.6. Summary:

Excellent research is sometimes wasted because research workers did not prepare a good research presentation. The methodology used in a study should be evaluated immediately after completion to discover more efficient procedures. A careful review of the sample design. The questionnaire, and the field methods will almost always pay dividends. Research work lends itself to experimentation so most studies offer an opportunity to test new ideas.

1.7. Self Assessment Questions

1. How will you write the research report? What different cares are taken while writing a research report?
2. How will you evaluate Research Procedure?

1.8 Suggested Readings

1. Boyd, Westfall and Stasch : Marketing Research
2. Green, Tull and Albaum : Research Decisions
3. Luck and Rubin : Marketing Research

UNIT – V

LESSON 12

IDENTIFYING MARKET SEGMENTS

1.1 Introduction

1.2. The Market Segmentation Process

1.2.1. Descriptors and the Identification of Market Segments

1.2.2. Descriptors Common to Both Consumer and Industrial Markets

1.2.3. Descriptors Specific to Consumer Markets

1.2.4. Descriptors Specific to Industrial Markets:

1.3. Research Design for Segmentation Models

1.3.1. A Priori Segmentation

1.3.2. Evaluation of A Priori Segmentation

1.3.3. Cluster-Based Segmentation

1.4. Combined A Priori and Clustering Model

1.5. Benefit Segmentation:

1.6. Conjoint Analysis:

1.6.1. Segment Attractiveness:

1.6.2. Attractiveness Criteria:

1.7. Self Assessment Questions

1.8 Suggested Readings

1.1 Introduction

The segmentation strategy recognized that markets are rarely homogeneous with respect to benefits wanted, purchase rates, and price and promotion elasticity. As a result, different market segments will vary

as to those characteristics pertaining to product feature preferences, size and growth, media habits, and competitive features. Most sellers recognize the presence and importance of market segments, as witness the product-line policies of companies selling such products as automobiles, trucks, airplanes, cigarettes, beers, detergents, appliances, TV sets, computers, shoes, photocopy machines, tires, and watches.

1.2. The Market Segmentation Process

In order to carry out market segmentation strategy, it had to undertake research to make operational the market segmentation process—the goal of which is to identify groups of consumers who are relatively homogeneous with respect to their responses to marketing inputs. To accomplish this goal requires (1) the selection of the most appropriate descriptors to use to identify market segments. (2) the determination differences between segments—(3) an evaluation of the relative long-term attractiveness of alternative segments.

1.2.1. Descriptors and the Identification of Market Segments

Segmentation requires the use of a dependent variable as well as independent variables. The former derives from the organizations need to segment the market and is referred to as the basis for segmentation. Since the overall objective of segmentation is concerned with elasticities to marketing inputs, it is understandable why the dependent variable would vary according to management's need.

The independent variables seek to explain the elasticity in dependent variable are called descriptors. Extent to which the basis for segmentation and the segment descriptors are related; that is, the extent to which

descriptors explain variations in the dependent variable. The same variables can be used as the basis for segmentation or as descriptors.

If the researcher is interested in obtaining a profile of the marketplace and its buying behavior relative to a given product, then such descriptors as demographics, socioeconomic characteristics, and psychographics are likely to be used to explain differences in product usage. Decisions with regards to the various marketing mix elements require the use of more situation-specific descriptors.

The descriptors used to identify segments typically vary between consumer and industrial markets. The number of segmentation descriptors available is enormous. The few of them are describe as under.

1.2.2. Descriptors Common to Both Consumer and Industrial Markets

Customer Needs: Consumers vary on what benefits they want as well as on the importance of each. In an effort to locate the product that best meets their needs, consumers develop a set of choice criteria that indicates the wanted product characteristics.

Product Usage: In most markets a small proportion of customers accounts for a substantial part of total purchase. In the case of industrial markets, customers are better known and heavy users are easier to identify.

Brand Loyalty: Users of a product vary as to their loyalty to a specific brand or supplier. For consumer products it is usually necessary to use marketing research to measure loyalty, while for industrial products such can often be directly observed.

Purchase influence: There are three types of buying influentials-those who prescribe; those who actually make the purchase; and those who use the products

Innovativeness: Potential customers can be divided into five groups relating to the speed with which they adopt new products-innovators, early adopters, early majority; late majority, and laggards. For consumer products, innovators and early adoptors tend to be younger. For industrial products the more innovative customers can often be identified based on their past purchases.

Geographical Location: It is often useful to segment markets based on different geographic regions, Geographical segmentation is almost always important as a physical descriptor because different locations have varying sales, growth rates, competitive structures, and servicing costs.

Account Type and Size: Consumer goods markets can be segmented into those served by wholesalers and retailers, as well as the different types of each. Indeed, in some cases an account may be so large as to constitute a segment in its own rights-e.g., General Motors and its purchase of steel.

1.2.3. Descriptors Specific to Consumer Markets

Lifestyle: It provides information about a consumer's behavior by identifying types of lifestyle that are representative of different consumer groups. From such information it is possible to infer on a generalized basis what products and benefits would appeal to a particular group.

Socio-Demographics: These are the most commonly used descriptors in the segmentation of consumer markets. They are used primarily to

identify consumers who have been clustered using other descriptors. Occupation can relate to the needs for certain products as, for example, work clothes, books and magazines, and tools.

1.2.4. Descriptors Specific to Industrial Markets:

Purchasing Structure: The degree to which the purchasing structure is centralized impacts buying activities strongly. Thus, in a centralized situation, the buyer is more likely to consider all suppliers, regardless of their geographic location, to emphasize cost savings and to minimize risks.

Buying Situation: Some market segments can be identified on the basis of three commonly encountered buying situations. One that has not arisen before and, therefore, may require that a considerable amount of data be gathered and evaluated. A “straight rebuy” is one handled routinely where there is little motivation to change suppliers.

Industrial Sector: This widely used approach groups customers according to the industrial sector in which they operate.

1.3. Research Design for Segmentation Models

There are Three major approaches to research designs, identify and measure differences between market segments. The first is the a priori design, which starts by selecting the basis for segmentation using such variables as demographics and then proceeds to collect data.

The second approach to segmentation uses a cluster-based research design, which groups respondents on the basis of their similarities. Deal with attitudes, needs, benefits wanted, and lifestyle. The third approach is a combination of the cluster and a priori approaches.

1.3.1. A Priori Segmentation

This segmentation model selects in advance both the basis for segmentation and the set of descriptors to be used. Further, certain assumptions are made about the relationships between the basis for segmentation and the chosen descriptors.

A priori market segmentation studies require large samples and the use of structured non-disguised data-collection forms. The measures needed for such a study are demographic characteristics, products or brand purchased and consumption rates for each household.

1.3.2. Evaluation of A Priori Segmentation

In most a priori segmentation studies, the information obtained is relatively useful, easy to obtain, and helpful in obtaining a better understanding of the marketplace.

It should be recognized that a priori studies may not reveal in any precise sense the identity of groups that possess different purchase behavior patterns with respect to a particular product.

1.3.3. Cluster-Based Segmentation

In this kind of segmentation model the number and type of segments are not known in advance lifestyle, and attitudes. In a manner similar to a priori studies, the size and other market characteristics are then obtained.

In its simplest form cluster-based segmentation represents a reversal of the a priori demographic example cited earlier.

For most of the packaged food products, the results showed that heavy and light users differ with respect to such demographic variables as marital status number of children, age, education, and income.

1.4. Combined A Priori and Clustering Model

This segmentation model combines the two approaches we have been discussing- a priori and clustering. A combination model is sometimes referred to as a hybrid model. One study divided sales accounts into three groups based on annual purchase; for each segment it then determined what benefits were wanted.

1.5. Benefit Segmentation:

In recent years increasing attention has been paid to segmentation based on the benefits wanted from a product. This is particularly true with new products when the issue is often whether to develop a separate product for each benefit segment. Thus, “a consumer’s attitude towards a particular brand in a certain product category is hypothesized to be a function of the relative importance of each of the relevant product attributes and the consumer’s beliefs about the brand on each attribute.

In its complete form such a segmentation model will show the consumer’s ideal combination of product characteristics. Clustering of those respondents with similar “Ideals” enables the researcher to better understand not only what consumers want, but how the various brands and new product concepts are perceived with regard to the ideal brand.

By comparing the preferences of different segments with their positioning of the various brands, much can be learned about the competitive strengths of the different brands, the extent to which the brands are in competition with one another, and the opportunities for new products. Such an analysis as indicated above should prove helpful to a company in determining what products to support and to what extent.

1.6. Conjoint Analysis:

This method helps management better understand the ways in which product features are linked to product preferences. Conjoint analysis is particularly useful in new product development work since it literally determines which combination of attributes is most preferred out of all possible combinations. Thus, several new products can be tested to determine which is preferred by the largest number of respondents and to identify the characteristics of that market segment preferring a particular product.

1.6.1. Segment Attractiveness:

Once market segments are identified, the key issue is to determine which opportunities should be pursued and how marketing investments should be allocated across segments. The strategic evaluation of market segments is a complex undertaking that requires consideration of a broad range of issues. On the other hand, competitive advantage will determine long-term profitability.

1.6.2. Attractiveness Criteria:

The major criteria of relevance in evaluating the relative attractiveness of different market segments. It is important to note that these criteria are not always independent of one another. Penetration in a given segment, the more difficult it will be to penetrate and the lower its profitability level. Marketing research can be of substantial help with reference to all the various criteria. It may be possible to obtain critical data from a variety of secondary sources. Clearly marketing research is necessary to provide information on the company's new product success

versus that of leading competitors; percent of outlets stocking; the company's and brand's image; and the comparative ratings accorded the company's advertising and selling efforts.

In dealing with the competitive criteria, the company needs to evaluate the strengths of individual competitors in the market and its ability to sustain competition. Some segments are more attractive than others because they are easier to penetrate. Segment penetrability depends heavily on the existence of competitive market gaps that the firm can exploit. Marketing research is obviously needed to provide information on the above. The relative profitability of different market segments is affected by number of elements such as entry costs, intensity of competition, scale effects, and level and stability of margins. Protectability has to do with the firm's ability to attain and defend a desired position in a given market segment. Marketing research is needed to determine what competencies are most needed by each segment.

1.7. Self Assessment Questions

1. Define Market Segmentation Process? How will you design research for segmentation models?
2. What is Conjoint Analysis?

1.8 Suggested Readings

1. Boyd, Westfall and Stasch : Marketing Research
2. Green, Tull and Albaum : Research Decisions
3. Luck and Rubin : Marketing Research