MBA.1.2.10.C Business Research

**MODULE-I**

**What is Research:**
Research refers to a search for knowledge. Research as a scientific and systematic search for persistent information on a specific topic. Research as a careful investigation on a specific topic. Research as a careful investigation or inquiry specially through search for new facts in any branch of knowledge. Research is actually a voyage of discovery. Research is an academic activity and as such the term should be used in a technical sense.

Acc. to Clifford Woody “Research comprises defining and redefining problems, formulating hypothesis, collecting, organizing and evaluating data, making deductions and researching conclusions and at last carefully testing the conclusions to determine whether they fit the formulating hypothesis”

We all possess the vital instinct of inquisitiveness makes us probe and attain full and fuller understandings of the unknown. This inquisitiveness is the mother of all knowledge and the method, which man employs for obtaining the knowledge of whatever the unknown, can be termed as research.

**Nature/characteristics/significance & Scope/Objectives of Business Research:**

**Significance:**
Research has special significance in solving various operational and planning problems of business and industry. Business research includes decision making in operational research, market research and motivational research. Market research is the investigation of the structure and development of market for the purpose of formulating efficient policies for purchasing production and sales.

Operation research refers to the application of mathematical, logical and analytical techniques to the solution of business problems of cost minimization or profit maximization which is termed as optimization problems. Motivational research deals with people behaviour with market characteristics. Research is equally important for social scientist in studying social relationship and seeking answers to various social problems. Other significance of research include

- For building career through masters or Ph. D programs and attain high position in the social structure.
- Professionals of research methodology mean a source of livelihood.
- For philosophers and thinkers this means the outlet of new ideas and insight.
- For literary people it is the development of new styles and creative world.
- Finally analysts and intellectuals it is the generalization of new theories.

**Objectives of Research:**

The purpose of research is to discover answers to questions through the applications of scientific procedures. The main aim of research is to find out the truth which is hidden and which has not been discovered as yet. Though each research study has its own specific purpose, we may think of research objectives as falling into a number of following broad groupings.

- To gain familiarity with phenomenon or achieve new insight known as exploratory or formulative research study.
- To portray accurately the characteristics of a particular individual situation or groups known as descriptive research.
- To determine the frequency with which something occurs or with which it is associated with known as diagnostic research studies.
- Hypothesis testing research deals with hypothesis of a casual relationship between variables.

**Motivation in Research:**
What makes people to undertake research? This is a question of fundamental importance. This possible motives for doing research may be either one or more of the following:

- Desire to get a research degree along with its consequential benefits.
- Desire to face the challenge in solving the unsolved problems.
- Desire to get intellectual joy of doing some creative work.
- Desire to be of service to society.
- Desire to get respectability.

**Functional Area of Research:**
- Marketing
- Human resource management
- Production
- Finance & Accounting
- Information technology
- Material planning & Production Control
- Purchasing function
- Advertising & Sales promotion function
What is Research Problem
A research problem refers to some difficulty a researcher experiences in the context of either a theoretical or practical situation and wants to obtain a solution for the same. Research problem does exit in following conditions.
- There should be an individual or a group or an organization to whom the problem can be attributed with some environment which is defined by values of uncontrolled variables.
- There must be at least two courses of action to be pursued.
- There must be at least two possible outcomes of the course of action of which one should be preferable to others.
- The choicest must have unequal efficiencies for the desired outcomes.

Based upon the above objective, the research problem could be in three areas like Exploratory, Descriptive & Casual.

Identification of Research Problem
The research problem undertaken for study must be carefully selected. The task is a difficult one, although it may not appear to be so. Help may be taken from a research guide in this connection. Nevertheless, every researcher must find out his own salvation for research problems cannot be borrowed. A problem must spring from the researchers mind like a plant springing form its own seed. The following points may be observed by a researcher in selecting a research problem.
- Subject which is overdone should not be normally chosen.
- Controversial subject should not become the choice.
- Too narrow or too vogue problems should be avoided.
- The subject selected for research should be familiar and feasible so that the related research material are within one’s reach.
- The importance of the subject, the qualifications and the training of a researcher, the cost involved, the time factor are few other criteria that must be considered.
- The selection of a problem must be preceded by a preliminary study.

HYPOTHESIS AND THE PROBLEM STATEMENT
Research problem statement by itself provides general direction for the study. It does not include all the specific information.

HYPOTHESIS - It is a conjecture or proposition about the solution to a problem, the relationship of two/more variables or the nature of some phenomenon. A good hypothesis should...
- state an expected relationship between two or more variables.
- be based on either theory or evidences
- be testable.
- be as brief as possible consistent with clarity
- be stated in declarative form
- be operational be eliminating ambiguity in the variables or proposed relationships.

Types and forms of hypothesis
Statistical hypothesis- a statement of the hypothesis given in statistical terms.
- a statement about one or more parameters that are measures of the population under study.
- a translation of the research hypothesis into a statistically meaningful relationship.

Example- the mean intelligence of members of the general population is lower that the mean intelligence of USD students.

Null Hypothesis-
A statistical hypothesis stated specifically for testing. The null hypothesis denoted by Ho, is a prediction about the parameter.

Example- There is no significant differences in mean intelligence between members of the general population and USD students.

Alternative Hypothesis- an alternative to the null hypothesis that reflects a significant differences situation. It is denoted by H1. We then perform a test to decide whether or not we should reject the null hypothesis in favour of the alternative.

Example- There is no significant differences in mean intelligence between members of the general population and USD students.

Directional Hypothesis- A hypothesis that implies the direction of results.

Example- the mean intelligence of members of the general population is significantly lower then the mean intelligence of USD students.

Non directional Hypothesis- a hypothesis that does not imply the direction of results.

Critical Region- choose a region known as the critical region. If the result of our test lies in this region, then we reject the null hypothesis in favour of the alternative.

One and Two Tailed Tests-
Suppose we have a null hypothesis Ho and an alternative hypothesis H1 we can consider the distribution given by the null hypothesis and perform a test to determine whether or not the null hypothesis should be rejected in favour of the alternative hypothesis. There are two different types of tests that can be performed. A one-tailed test looks for an increase or decrease in the parameter whereas a two-tailed test looks for any changes in the parameter which can be any change-increase or decrease. We can perform the test at any level usually 1%, 5% or 10%. For example performing the test at a 5% level means that there is a 5% chance or wrongly rejecting
If we perform the test at the 5% level and decide to reject the null hypothesis we say there is significant evidence at the 5% level to suggest the hypothesis is false.

One-Tailed Test:
We choose a critical region. In a one tailed test the critical region will have just one part. If our sample value lies in this region, we reject the null hypothesis in favour of the alternative. Suppose we are looking for a definite decrease then the critical region will be to the left. In this test the value of the parameter can be as high as we like.

Two-Tailed Test:
In this test we are looking for either an increase or a decrease. For exm. Ho must be that the mean is equal to 9. This time, however, H1 would be that the mean is not equal to 9. In this case therefore the critical region has two parts.

Foreshadowed problems- in ethnographic research statements of specific research problems that provide a focus for the research. They identify factors for the researcher to consider without specifying anticipated result.

RESEARCH OBJECTIVES:--
The objectives of a research project summarise what is to be achieved by the study. Objectives should be closely related to the statement of the problem. For example if the problem identified is low utilization of child welfare clinics, the general objectives of the study could be to identify the reasons for this low utilization, in order to find solutions. The general objectives of a study states what researchers expect to achieve by the study in general terms. It is possible to break down a general objective into smaller, logically connected parts. These are normally referred to as specific objectives. Specific objectives should systematically address the various aspects of the problem as defined under statement of the problem and the key factors that are assumed to influence or cause the problem. They should specify what we will do in our study, where and for what purpose.

TYPES OF BUSINESS RESEARCH
1. Descriptive Vs. Analytical
2. Applied Vs. Fundamental
3. Quantitative Vs. Qualitative
4. Conceptual Vs. Empirical
5. Special Type of research

Descriptive Vs. Analytical
Descriptive research includes surveys and fact-finding enquiries of different kinds. The major purpose is description of the state of affairs as it exists at present. In social science and business research we quite often use the term ex post facto research for descriptive research studies. The main characteristics of this method is that the researchers has no control over the variables, he can only report what has happened or what is happening. In analytical research on the other hand, the researcher has to use facts or information already available and analyze these to make a critical evaluation of the material.

Applied Vs. Fundamental
Applied research aims at finding a solution for an immediate problem facing a society or an industrial organization whereas fundamental research is mainly concerned with generalizations and with the formulation of a theory. Research concerning some natural phenomenon or relating to pure mathematics are examples of fundamental research. Research aimed at certain conclusions facing a concrete social or business problem is an example of applied research.

Quantitative Vs. Qualitative
Quantitative research is based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity. Qualitative research on the other hand is concerned with qualitative phenomenon, phenomena relating or involving quality or kind. It is important in the behavioural sciences where the aim is to discover the underlying motives of human behaviour. Through such research we can analyse the various factors which make people like or dislike a particular thing.

Conceptual Vs. Empirical
Conceptual research is that related to some abstract idea or theory. It is generally use by philosophers and thinkers to develop new concepts. Empirical research relies on experience or observation alone, often without due regard for system and theory. It is data-based research coming up with conclusions which are capable of being verified by observation or experiment.

Special Type of research
One-time research or longitudinal research-In the former case the research is confined to a single time period, whereas in the latter case the research is carried on over several time periods.
Field setting research or laboratory research or simulation research. Such research follow case study methods or indepth approaches to reach the basic causal relations. Such studies usually go deep into the causes of things or events that interest us using very small samples and very deep probing data gathering devices.

Exploratory or formalized. The objective of exploratory research is the development of hypothesis rather than their testing, whereas formalized research studies are those with substantial structure and with specific hypothesis to be tested.

Historical research. It utilizes historical sources like documents, remains etc. to study events or ideas of the past, including the philosophy of persons and groups at any remote point of time.

Conclusion oriented and decision oriented. While doing conclusion oriented research a researchers is free to pick up a problem, redesign the enquiry as he proceeds and is prepared to conceptualize as he wishes. Decision-oriented research is always for the need of a decision maker and the researcher in this case is not free to embark upon research according to his own inclination.

RESEARCH PROCESS

Research process consists of a series of actions or steps necessary to effectively carry out research and the desired sequencing of these steps.

Formulating Research Problem-
--Nature and relationship
--Conceptual and empirical literature

Extensive Literature Survey-
--A brief summery
--Abstract, journal, bibliography published
--Academic journal, conference proceeding govt. report, books.

Development of working hypothesis-
--Logical or empirical consequences
--Tested or examination of data and record
--Review of studies

Preparing the Research Design-
--Conceptual structure
--Minimal expenditure, time,money
--Availability and skill researchers and his staff
--Obtaining the information
--Cost factor relating to the research

Determining Sample Design-
--Deliberate sampling/judgement sampling
--Simple random sampling
--Systematic sampling
--Stratified sampling
--Quota sampling

Collecting Data-
--By observation-Through telephone interview
--By mailing interview

Execution of the project-
--project proceeds on correct lines
--Collected data would be adequate and dependable
--Accuracy collected information

Analysis of Data-
--coding,editing,tabulation

Hypothesis Testing-
--T test, Z test, X2 test, F test

Generalization and interpretation-
--Build a theory
--Prepare a new question for future research

Preparation of the Report or thesis-
--introduction,summery of findings, main report, conclusion, bibliography, index.
**Research Design:**
Research design is a framework for conducting business research projects. A good research design characterized by flexible, appropriate, efficient, and economical and minimizes bias and maximizes the reliability of the data collected which are to be analyzed. Research design involves following components.
- Definition of the information needed
- Design the exploratory, descriptive or casual phases of research
- Specifying the measurement and scaling procedure
- Constructing and pretest a questionnaire or an appropriate form for data collection
- Specify the sampling process and sample size.
- Develop a plan of data analysis.

**Research Design Classification:**
Research design broadly divided into exploratory research and conclusive research.

### Explorative Research:
Exploratory research provides insight into an understanding of the problem confronting the researcher.
Conclusive research is more formal and structured which further divided into descriptive research and casual research.

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<tr>
<th>Objective</th>
<th>Explorative</th>
<th>Conclusive</th>
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<tbody>
<tr>
<td>Provides insight and understanding</td>
<td>To test specific hypothesis and examine relationship</td>
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<tr>
<th>Characteristics</th>
<th>Explorative</th>
<th>Conclusive</th>
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<td>Information needed is defined loosely, research process is flexible and unstructured, sample is small and non representative, analysis of primary data is qualitative</td>
<td>Information needed is clearly defined, research process is formal and structured, sample is large and representative, data analysis is quantitative.</td>
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<th>Findings</th>
<th>Explorative</th>
<th>Conclusive</th>
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<td>Tentative</td>
<td></td>
<td>Conclusive</td>
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<th>Outcome</th>
<th>Explorative</th>
<th>Conclusive</th>
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<td>Generally followed by further exploratory or conclusive</td>
<td>Findings used as inputs into decision making</td>
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### Descriptive Research:
Descriptive research is conducted for
- To describe the characteristics of relevant groups such as consumers, sales people, organizations, or market areas.
- To estimate the %age of the units in a specified population exhibiting certain behaviour.
- To determine the perception of product characteristics
- To determine the degree to which the marketing variables are associated
- Finally make specific predictions.

Descriptive research are further subdivided into cross sectional design and longitudinal design.

**Cross sectional Design:** Cross sectional design involves the collection of information from any given sample of population elements only once. They may be either single cross sectional or multiple cross sectional. Single cross sectional design is meant for one sample of respondent from the target population and information obtained from this sample only once. In multiple cross sectional design there are two or more samples of respondent and information from each sample is obtained only once. Multiple cross sectional design consisting of series of surveys conducted at appropriate time intervals. The cohort analysis refers to the group of respondents who experiences the same events within the same time interval.

**Longitudinal Design:** A type of research design involving a fixed sample of population elements that is measured repeatedly. Samples remains the same over time providing a series of situations and the changes that are taking place over time.

### Experimental Design:
A set of experimental procedures specifying the test units and sampling procedures, independent variables, dependent variables, and methods for controlling extraneous variables. An experimental research goal could be achieved through internal validity and external validity. Internal validity is a measure of accuracy of an experiment. It also reflects the manipulation of the independent variables of treatments actually caused the effects on the dependent variables. External validity refers to the cause and effect relationship found in the experiment. Experimental design can be classified into four groups such as

- Pre-experimental design: Do not control for extraneous factors by randomization. For example one shot case study, one group pre-test – post test design, static group.
• True experimental design distinguished by the fact that the researcher can randomly assign test units to experimental groups and also treatments to experimental groups. Pre-test – Post test control group, post test only control group, Solomon core group.
• Quasi experimental design: Design that apply part of the procedures of true experimentations but lack full experimental control. Time series, multiple time series.
• Statistical design: Design that allow for the statistical control and analysis of external variable. This includes randomized block design, Latin square design and factorial design.

**Observational Studies & Survey:**
The recording of behavioral patterns of people, objects and events in a systematic manner to obtain information about the phenomenon of interests is known as observational studies. Observational methods may be structured or un structured, disguised or un disguised, or natural or contrived observation. Structured observation techniques used by researchers to clearly define the behaviors to be observed and the methods by which they will be measured. Unstructured observation involves researcher monitoring all aspects of phenomenon without specifying the details in advance. In disguised observation the respondents are not informed or unaware regarding they are being observed. This type of observation is made through one way mirrors, hidden cameras, or inconspicuous mechanical devices. In undisguised observation the respondents are aware that they are under observation. Natural observation involves behavioral observations in the environment. In contrived observation respondents behaviour is observed in an artificial environment. Observation methods can be classified as
• **Personal Observation:** It is an observational research strategy in which human observers record the phenomenon being observed as it occurs.
• **Mechanical Observation:** Here a mechanical devices record the phenomenon being observed.
• **Audit:** In audit the researcher’s collects data by examining physical records or performing inventory analysis.
• **Content Analysis:** The objective, systematic and quantitative descriptions of the manifest content of a communication is known as content analysis.
• **Stress Analysis:** An approach in which data collection is based on physical traces or evidence of past behaviour.

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