II M.COM., RESEARCH METHODOLOGY

Syllabus:

UNIT-1-Introduction:

Research-definition, characteristics, nature and scope. Various types of research – Formulation or research problem – Major steps in Research – Hypotheses – Research design – Uses of social research.

DEFINITION OF RESEARCH:

Research may be defined as systematic gathering of data and information and its analysis for advancement of knowledge in any subject. Research attempts to find answer intellectual and practical questions through application of systematic methods.

The Advanced Learner's Dictionary of Current English lays down the meaning of research as "a careful investigation or inquiry especially through search for new facts in any branch of knowledge. Redman and Morley define research as a "systematized effort to gain new knowledge."

CHARACTERISTICS OF RESEARCH:

Features of Research are as follows:

1. Empirical - based on observations and experimentation on theories.
2. Systematic - follows orderly and sequential procedure.
3. Controlled - all variables except those that are tested/experimented upon are kept constant.
4. Employs hypothesis - guides the investigation process
5. Analytical - There is critical analysis of all data used so that there is no error in their interpretation
6. Objective, Unbiased, & Logical - all findings are logically based on empirical
7. Employs quantitative or statistical methods - data are transformed into numerical measures and are treated statistically.

NATURE AND SCOPE OF RESEARCH:

1. To gain familiarity with a phenomenon or to achieve new insights into it (studies with this object in view are termed as exploratory or formulate research studies);
2. To portray accurately the characteristics of a particular individual, situation or a group(studies with this object in view are known as descriptive research studies);
3. To determine the frequency with which something occurs or with which it is associated with something else (studies with this object in view are known as diagnostic research studies);
4. To test a hypothesis of a causal relationship between variables (such studies are known as hypothesis-testing research studies).
5. Define the focus of your study.
6. Clearly identify variables to be measured.
7. Indicate the various steps to be involved.
8. Establish the limits of the study.

9. Avoid collection of any data is not strictly necessary.
10. Understand exactly what to teach, how to teach it and when to teach it.

TYPES OF RESEARCH:

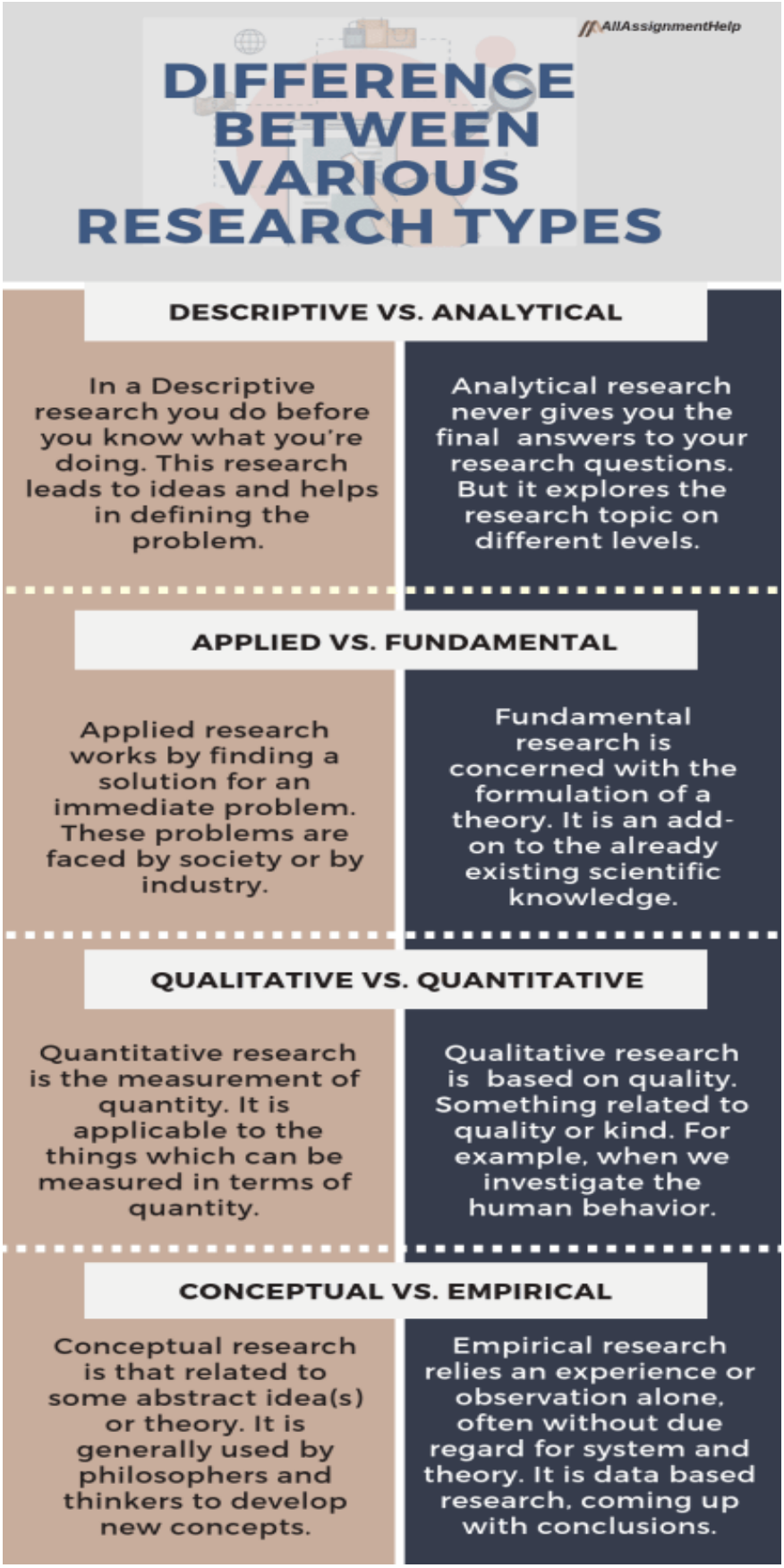
Two main types of research are:

1. **Pure research** is carried out to generate new human knowledge. To uncover new facts or fundamental principles you need pure research. The researcher wants to advance in a specific field, for example, neuroscience, by answering a specific question, such as "Why do humans sleep?" Pure research is based on experimentation and observation. The results of your research are published in peer-reviewed journals. This is *science*. Rigorous standards and methodologies exist to preserve objectivity and ensure the credibility of conclusions. (Things get squishy when corporations fund ostensibly pure research, as they frequently do.)

2. **Applied research** borrows ideas and techniques from pure research to serve a specific real-world goal. Goals are like creating a super soldier or improving the quality of hospital care or finding new ways to market any product. While ethics are as important, and methods can be more relaxed. By this, I meant changing the questions you ask while doing a study, or making the most of an imperfect sample group because you're tight on time. Your research is successful only to the extent that it adds to the stated goal. As with pure research, sometimes you accidentally discover something valuable you weren't even looking for, and that's a fantastic bonus.

Different types of research:

There are further types of research presentations. You may say these are the subdivision of above-mentioned types. Now you will learn about different types of research and basic difference in them.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DIFFERENCE BETWEEN VARIOUS RESEARCH TYPES
DESCRIPTIVE VS. ANALYTICAL
In a Descriptive research you do before you know what you're doing. This research leads to ideas and helps in defining the problem.
Analytical research never gives you the final answers to your research questions. But it explores the research topic on different levels.
APPLIED VS. FUNDAMENTAL
Applied research works by finding a solution for an immediate problem. These problems are faced by society or by industry.
Fundamental research is concerned with the formulation of a theory. It is an add-on to the already existing scientific knowledge.
QUALITATIVE VS. QUANTITATIVE
Quantitative research is the measurement of quantity. It is applicable to the things which can be measured in terms of quantity.
Qualitative research is based on quality. Something related to quality or kind. For example, when we investigate the human behavior.
CONCEPTUAL VS. EMPIRICAL
Conceptual research is that related to some abstract idea(s) or theory. It is generally used by philosophers and thinkers to develop new concepts.
Empirical research relies an experience or observation alone, often without due regard for system and theory. It is data based research, coming up with conclusions.

a) Generative vs. exploratory research:

This is the research you do before you know what you're doing. This research leads to ideas and helps in defining the problem. Don't think of this as just the earliest research. Even if you're working on a current product or service, you might be looking for ideas. You need ideas for additional features. Generative research includes interviews, reviewing existing literature, and field observation,

Exploratory research, as the name says, intends to explore the research questions. It does not make to give conclusive or final solutions for the existing problems. Exploratory research is conducted with an aim to study a problem that does not have any solution yet.

Exploratory research never gives you the final or conclusive answers to your research questions. But it explores the research topic on different levels. It has been seen that exploratory research is an initial stage of research. Exploratory research provides a basis of conclusive research. It will help in making of research design, sampling methodology and data collection method. Exploratory research tackles new problems on which no research has been done.

b) Descriptive vs. Analytical research:

Descriptive research consists of surveys and fact-finding inquiries of various kinds. The major reason to carry out descriptive research is describing the state of affairs as it exists at present. When we do descriptive result in social science and business research, we use the term Ex post facto research for descriptive research work. The main feature of this method is that the researcher doesn't have control over the variables; he can only report things like what has happened or what is happening.

Ex post facto studies also count attempts by researchers to discover causes, even when controlling variables is out of their hands. The methods of research use for descriptive research are survey methods of every kind. It includes comparative and co-relational methods. Whereas, in analytical research, Research use facts or already available information. He critically evaluates and analyzes the material.

c) Applied vs. Fundamental research:

Research can be of two types. One is applied (or action) research. Second is fundamental (to basic or pure) research. Applied research works by finding a solution for an immediate problem. These problems are faced by society or by industry whereas fundamental research is primarily concerned with the formulation of a theory. "Gathering knowledge for knowledge's sake is termed 'pure' or 'basic' research." Research which is more concerned with a natural phenomenon or relating to pure mathematics is fundamental research. Those research studies which are based on human behavior are also examples of fundamental research.

But applied research is based at conclusions. These conclusions are facing a concrete social or business problem. Applied research is to identify social, economic or political trends. These trends may affect a particular institution or copy research or marketing research.

d) Quantitative vs. Qualitative research:

Quantitative research is recognized by its name. It is the measurement of quantity or amount. It is applicable to all things which we can measure in terms of quantity. Qualitative research is simply means quality. Something related to or involving quality or kind is qualitative research. For example, when we investigate the reason behind human behavior. This type of research is to discover underlying motives and desires, using in-depth interviews for the purpose. Other techniques of such research are sentence completion tests, word association tests, story completion tests.

Attitude or opinion research is also an example of kinds of qualitative research. Other examples are how people feel about a particular institution. Behavioral science has an important place for qualitative research. The aim of this research type is to discover the motives of human behavior. Through these researches, we can analyze the factors affecting behavior. This will further help in to motivate people to behave in a proper manner.

e) Conceptual research vs. Empirical research:

Conceptual research is related to some abstract ideas or theory. It is mostly used by thinkers and philosophers to develop new concepts or to reinterpret existing ones. On the other hand, 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.

Such research is thus characterized by the experimenter's control over the variables under study and his deliberate manipulation of one of them to study its effects. Empirical research is appropriate when the proof is sought that certain variables affect other variables in some way. Evidence that is gathered through empirical studies or experiments, is today considered to be the most powerful support possible for a given hypothesis.

FORMULATION OF RESEARCH PROBLEM:

What is a research problem?

It's a clear and definite statement or expression about your chosen area of concern, a difficulty to eliminate, a condition to improve, or a troubling problem that exists in theory, literature, and practice. A research problem indicates a need for its meaningful investigation. It doesn't state how to do something and a researcher shouldn't present a value question or offer a broad research proposal.

A research problem is a statement about an area of concern, a condition to be improved, a difficulty to be eliminated, or a troubling question that exists in scholarly literature, in theory, or in practice that points to the need for meaningful understanding and deliberate investigation. In some social science disciplines the research problem is typically posed in the form of a question. A research problem **does not** state how to do something, offer a vague or broad proposition, or present a value question.

The purpose of a problem statement is to:

1. **Introduce the reader to the importance of the topic being studied**. The reader is oriented to the significance of the study and the research questions or hypotheses to follow.
2. **Places the problem into a particular context** that defines the parameters of what is to be investigated.
3. **Provides the framework for reporting the results** and indicates what is probably necessary to conduct the study and explain how the findings will present this information.

How to identify a research problem?

After choosing a specific topic for your academic paper, you need to state it as a clear research problem that identifies all the issues that you'll address. It's not always simple for students to formulate it. In some fields, they may end up spending a lot of time thinking, exploring, and studying before getting a clear idea of what research questions to answer.

Some topics are too broad to give a researchable issue. For example, if you decide to study certain social issues, like child poverty, remember that they don't provide any researchable question. These are very broad to address and take a lot of time and resources to become unfeasible so that your study will lack enough focus and depth.

Basic characteristics of research problem: For your research problem to be effective, make sure that it has these basic characteristics:

- Reflecting on important issues or needs;
- Basing on factual evidence (it's non-hypothetical);
- Being manageable and relevant;
- Suggesting a testable and meaningful hypothesis (avoiding useless answers).

Steps in formulating your research problem:

Formulating your research problem enables you to make a purpose of your study clear to yourself and target readers. Consider 5 ways to formulate the research problem:

- Specify your research objectives;
- Review its context or environment;
- Explore its nature;
- Determine variable relationships;
- Anticipate the possible consequences of alternative approaches.

Features of good research problem:

Do a simple self-test to determine whether it's good enough for your scientific project and make sure that:

- Your question allows for a number of potential answers;
- It's testable, flexible, and open-ended;
- You have the evidence necessary to address it;
- It's possible to break it into resolvable parts;

- It’s precise and clear;
- You don’t use any vague terms that require definitions;
- It’s suitable for the length of your paper;
- You can explain why your solutions matter;
- You made premises explicit.

MAJOR STEPS IN RESEARCH:

Research Process: 8 Steps in Research Process:

All research endeavors share a common goal of furthering our understanding of the problem and thus all traverse through certain basic stages, forming a process called the **research process.**

An understanding of the research process is necessary to effectively carry out research and sequencing of the stages inherent in the process.

These 8 stages in the research process are;

1. Identifying the problem.
2. Reviewing literature.
3. Setting research questions, objectives, and hypotheses.
4. Choosing the study design.
5. Deciding on the sample design.
6. Collecting data.
7. Processing and analyzing data.
8. Writing the report.

Step – 1: Identifying the Problem:

The first and foremost task in the entire process of scientific research is to identify a research problem.A well-identified problem will lead the researcher to accomplish all-important phases of the research process, starting from setting objectives to the selection of the research methodology.

Intuitively, researchable problems are those who have a possibility of thorough verification investigation, which can be effected through the analysis and collection of data, while the non-research problems do not need to go through these processes.

Step – 2: Reviewing of Literature:

A review of relevant literature is an integral part of the research process. It enables the researcher to formulate his problem in terms of the specific aspects of the general area of his interest that has not been so far researched.

In sum, we enumerate the following arguments in favor of reviewing the literature:

- It avoids duplication of the work that has been done in the recent past.
- It helps the researcher to find out what others have learned and reported on the problem.
- It helps the researcher to become familiar with the types of methodology followed by others.
- It helps the researcher to understand what concepts and theories are relevant to his area of investigation.

Step – 3: Setting research questions, objectives, and hypotheses:

After discovering and defining the research problem, researchers should make a formal statement of the problem leading to research objectives.An **objective** will precisely say what should be researched, to delineate the type of information that should be collected, and provide a framework for the scope of the study. The best expression of a research objective is a well-formulated, testable research hypothesis.

A hypothesis is an unproven statement or proposition that can be refuted or supported by empirical data. Hypothetical statements assert a possible answer to a research question.

Step -4: Choosing the study design:

The **research design** is the blueprint or framework for fulfilling objectives and answering research questions. It is a master plan specifying the methods and procedures for collecting, processing, and analyzing the collected data. There are four basic research designs that a researcher can use to conduct his or her study;

1. survey,
2. Experiment,
3. secondary data study, and
4. Observational study.

Step – 5: Deciding on the sample design:

Sampling is an important and separate step in the research process. The basic idea of sampling is that it involves any procedure that uses a relatively small number of items or portions (called a **sample)** of a universe (called **population)** to conclude the whole population.

A **population** is the total collection of elements about which we wish to make some inference or generalization.

A **sample** is a part of the population, carefully selected to represent that population. If certain statistical procedures are followed in selecting the sample, it should have the same characteristics as the population as a whole. These procedures are embedded in the sample design.

Sample design refers to the methods to be followed in selecting a sample from the population and the estimating technique, vis-a-vis formula for computing the sample statistics.

Step – 6: Collecting data:

The gathering of data may range from simple observation to a large-scale survey in any defined population. There are many ways to collect data. The approach selected depends on the objectives of the study, the research design, and the availability of time, money, and personnel.

With the variation in the type of data (qualitative or quantitative) to be collected, the method of data collection also varies. The most common means for collecting quantitative data is the **structured interview.**

Studies that obtain data by interviewing respondents are called surveys. Data can also be collected by using **self-administered questionnaires. Telephone interviewing** is another way in which data may be collected.

Step-7: Processing and Analyzing Data:

Data processing generally begins with the editing and coding of data. Data are edited to ensure consistency across respondents and to locate omissions, if any.

In survey data, editing reduces errors in the recording, improves legibility, and clarifies unclear and inappropriate responses. In addition to editing, the data also need coding.

Data analysis usually involves reducing accumulated data to a manageable size, developing summaries, searching for patterns, and applying statistical techniques for understanding and interpreting the findings in the light of the research questions.Further, the researcher, based on his analysis, determines if his findings are consistent with the formulated hypotheses and theories.

Step-8: Writing the report – Developing Research Proposal, Writing Report, Disseminating and Utilizing Results:

The entire task of a research study is accumulated in a document called a proposal. A research proposal is a work plan, prospectus, outline, an offer, a statement of intent or commitment from an individual researcher or an organization to produce a product or render a service to a potential client or sponsor.

A report is an excellent means that helps to establish the researcher's credibility. At a bare minimum, a research report should contain sections on:

- An executive summary;
- Background of the problem;
- Literature review;

- Methodology;
- Findings;
- Discussion;
- Conclusions and
- Recommendations.

HYPOTHESIS:

What is Hypothesis?

The hypothesis is an assumption that is made on the basis of some evidence. This is the initial point of any investigation that translates the research questions into a prediction.

It includes components like variables, population and the relation between the variables. A research hypothesis is a hypothesis that is used to test the relationship between two or more variables.

DEFINITION: A hypothesis may be defined as a proposition or a set of proposition set forth as an explanation for the occurrence of some specified group of phenomena either asserted merely as a provisional conjecture to guide some investigation or accepted as highly probable in the light of established facts.

For example, consider statements like the following ones: "Students who receive counselling will show a greater increase in creativity than students not receiving counselling" Or "the automobile A is performing as well as automobile B."

Characteristics of hypothesis in Research Methodology:

Characteristics of hypothesis: Hypothesis must possess the following characteristics:

1. Hypothesis should be clear and precise. If the hypothesis is not clear and precise, the inferences drawn on its basis cannot be taken as reliable.
2. Hypothesis should be capable of being tested. In a swamp of untestable hypotheses, many a time the research programmes have bogged down. Some prior study may be done by researcher in order to make hypothesis a testable one.
3. Hypothesis should state relationship between variables, if it happens to be a relational hypothesis.
4. Hypothesis should be limited in scope and must be specific. A researcher must remember that narrower hypotheses are generally more testable and he should develop such hypotheses.
5. Hypothesis should be stated as far as possible in most simple terms so that the same is easily understandable by all concerned. But one must remember that simplicity of hypothesis has nothing to do with its significance.
6. Hypothesis should be consistent with most known facts i.e., it must be consistent with a substantial body of established facts. In other words, it should be one which judges accept as being the most likely.

7. Hypothesis should be amenable to testing within a reasonable time. One should not use even an excellent hypothesis, if the same cannot be tested in reasonable time for one cannot spend a life-time collecting data to test it.
8. Hypothesis must explain the facts that gave rise to the need for explanation. This means that by using the hypothesis plus other known and accepted generalizations, one should be able to deduce the original problem condition. Thus hypothesis must actually explain what it claims to explain; it should have empirical reference.

Sources of Hypothesis:

Following are the sources of hypothesis:

- Resemblance between the phenomenon.
- Observations from past studies, present day experiences, and from the competitors.
- Scientific theories.
- General patterns that influence the thinking process of people.

Types of Hypothesis:

There are six forms of hypothesis and they are:

- Simple hypothesis
- Complex hypothesis
- Directional hypothesis
- Non-directional hypothesis
- Null hypothesis
- Associative and casual hypothesis

1. Simple Hypothesis

It shows a relationship between one dependent variable and a single independent variable. For example – If you eat more vegetables, you will lose weight faster. Here, eating more vegetables is an independent variable, while losing weight is the dependent variable.

2. Complex Hypothesis

It shows the relationship between two or more dependent variables and two or more independent variables. Eating more vegetables and fruits leads to weight loss, glowing skin, reduces the risk of many diseases such as heart disease, high blood pressure, and some cancers.

3. Directional Hypothesis

It shows how a researcher is intellectual and committed to a particular outcome. The relationship between the variables can also predict its nature. For example- children aged four years eating proper food over a five year period are having higher IQ level than children not having a proper meal. This shows the effect and the direction of effect.

4. Non-directional Hypothesis

It is used when there is no theory involved. It is a statement that a relationship exists between two variables, without predicting the exact nature (direction) of the relationship.

5. **Null Hypothesis**

It provides the statement which is contrary to hypothesis. It's a negative statement, and there is no relationship between independent and dependent variable. The symbol is denoted by "HO".

6. Associative and Causal Hypothesis

Associative hypothesis occurs, When there is a change in one variable resulting a change in the other variable. Whereas, Causal hypothesis propose a cause and effect interaction between two or more variables.

RESEARCH DESIGN:

Research design definition:

Research design is the framework of research methods and techniques chosen by a researcher. The design allows researchers to hone in on research methods that are suitable for the subject matter and set up their studies up for success.

The design of a research topic explains the type of research (experimental, survey, correlation, semi-experimental, review) and also its sub-type (experimental design, research problem, descriptive case-study).

The essential elements of the research design are:

1. Accurate purpose statement
2. Techniques to be implemented for collecting and analyzing research
3. The method applied for analyzing collected details
4. Type of research methodology
5. Probable objections for research
6. Settings for the research study
7. Timeline
8. Measurement of analysis

Four key characteristics of research design:

- **Neutrality:** When you set up your study, you may have to make assumptions about the data you expect to collect. The results projected in the research design should be free from bias and neutral. Understand opinions about the final evaluated scores and conclusion from multiple individuals and consider those who agree with the derived results.
- **Reliability:** With regularly conducted research, the researcher involved expects similar results every time. Your design should indicate how to form research questions to ensure the standard of results. You'll only be able to reach the expected results if your design is reliable.

- **Validity:** There are multiple measuring tools available. However, the only correct measuring tools are those which help a researcher in gauging results according to the objective of the research. The questionnaire developed from this design will then be valid.
- **Generalisation:** The outcome of your design should apply to a population and not just a restricted sample. A generalized design implies that your survey can be conducted on any part of a population with similar accuracy.

CLASSIFICATION OF RESEARCH DESIGN:

1. **Qualitative research design:** Qualitative research determines relationships between collected data and observations based on mathematical calculations. Theories related to a naturally existing phenomenon can be proved or disproved using statistical methods. Researchers rely on qualitative research design methods that conclude "why" a particular theory exists along with "what" respondents have to say about it.

2. **Quantitative research design:** Quantitative research is for cases where statistical conclusions to collect actionable insights are essential. Numbers provide a better perspective to make critical business decisions. Quantitative research design methods are necessary for the growth of any organization. Insights drawn from hard numerical data and analysis prove to be highly effective when making decisions related to the future of the business.

You can further break down the types of research design into five categories:

1. Descriptive research design: In a descriptive design, a researcher is solely interested in describing the situation or case under their research study. It is a theory-based design method which is created by gathering, analyzing, and presenting collected data. This allows a researcher to provide insights into the why and how of research. Descriptive design helps others better understand the need for the research. If the problem statement is not clear, you can conduct exploratory research.

2. Experimental research design: Experimental research design establishes a relationship between the cause and effect of a situation. It is a causal design where one observes the impact caused by the independent variable on the dependent variable. For example, one monitors the influence of an independent variable such as a price on a dependent variable such as customer satisfaction or brand loyalty. It is a highly practical research design method as it contributes to solving a problem at hand. The independent variables are manipulated to monitor the change it has on the dependent variable. It is often used in social sciences to observe human behavior by analyzing two groups. Researchers can have participants change their actions and study how the people around them react to gain a better understanding of social psychology.

3. Correlational research design: Correlational research is a non-experimental research design technique that helps researchers establish a relationship between two closely connected variables. This type of research requires two different groups. There is no assumption while evaluating a relationship between two different variables, and statistical analysis techniques calculate the relationship between them.

A correlation coefficient determines the correlation between two variables, whose value ranges between -1 and +1. If the correlation coefficient is towards +1, it indicates a positive relationship between the variables and -1 means a negative relationship between the two variables.

4. Diagnostic research design: In diagnostic design, the researcher is looking to evaluate the underlying cause of a specific topic or phenomenon. This method helps one learn more about the factors that create troublesome situations.

This design has three parts of the research:

· Inception of the issue
· Diagnosis of the issue
· Solution for the issue

5. Explanatory research design: Explanatory design uses a researcher's ideas and thoughts on a subject to further explore their theories. The research explains unexplored aspects of a subject and details about what, how, and why of research questions.

SOCIAL RESEARCH:

MEANING-Social Research:

The youngest of the social sciences that is sociology is also doing a lot of research work. "Sociological research is highly interesting and exciting. Research in sociology is really a kind of systematic detective work.

It faces innumerable puzzles and suspicions, withstands disappointments and discouragements, challenges blind faith and hearsay and finally becomes successful in unraveling the mystery that clouds the truth."

DEFINITION:

According to **C.A. Moser :** "Social research is a systematized investigation to gain new knowledge about social phenomenon and problems."

USES OF SOCIAL RESEARCH:

1. It is directed towards the solution of problems. The ultimate goal is to discover cause-and-effect relationship between social problems.
2. It emphasis the development of generalizations, principles or theories that will be helpful in predicting future occurrences.
3. It is based upon observable experience or empirical evidence.
4. It demands accurate observations and description. Researchers may choose from a variety or non-qualitative description of their observations.

5. It involves gathering new data from primary sources or using existence data for new purpose
6. Although social research activities may at time be somewhat random and unsystematic, it is more often characterized by carefully designed procedure that applies rigorous analysis.
7. It requires expertise. The researcher knows what is already known about the problem and how others have investigated.
8. It strives to the objective and logical applying every possible test to validate the procedure employed, data collected and conclusion reached
9. It involves the guests for answer to unsolved problems.
10. It is characterized by patient and unhurried activity. Researcher must expect disappointment and discouragement as they pursue the answer to difficult question.

Books of Reference:

1. Paneerselvam.R Research Methodology, Prentice Hall of India, New Delhi, 2004.
2. Green.P.E. et al., Research for mMarketing Decisions, 5th ed., Prentice-Hall of India.
3. Yound, P.V., Scientific Social Survey and Research, Prentice Hall, 1949, New York.