

UNIT - 3 | PAPER - 1

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UNIT 3 - PAPER 1

RESEARCH METHODS

1. Criteria Of Selections A Research Plan
2. Materials & Methods
3. Design Of Experiments
4. Completion & Documentation of Data
5. References Citation
6. Format For Writing Research Paper
7. Review Articles
8. Major Scientific Journals
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CRITERIA OF SELECTIONS A RESEARCH PLAN



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MEANING OF RESEARCH

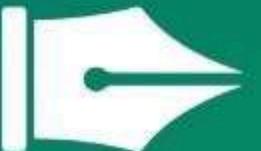
A systematized effort to gain new knowledge" - Redman and Mory

The word "research" originated from the old French word "recherchier" meaning to search and search again.

- It literally implies repeating a search for something and implicitly assumes that the earlier search was not exhaustive and complete in the sense that there is still scope for improvement.
- Research in common parlance refers to a search for knowledge.
- It may be defined as a scientific and systematic search for pertinent information on a specific topic/area.
- In fact, research is an art of scientific investigation.
- 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".



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BASIC OPERATIONS IN SYSTEMATIC RESEARCH

Research is a scientific approach of answering a research question, solving a problem or generating new knowledge through a systematic and orderly collection, organization, and analysis of information with an ultimate goal of making the research useful in decision-making.

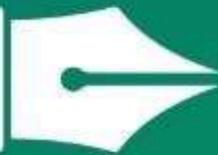


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BASIC OPERATIONS

1. Data collection: It refers to observing, measuring, and recording information.
2. Data analysis: It refers to arranging and organizing the collected data so that we may be able to find out what their significance is and generalize about them.
3. Report writing: It is an inseparable part and a final outcome of a research study. Its purpose is to convey information contained in it to the readers or audience.
 - In this context, legal research is defined as 'systematic' finding law on a particular point and making advancement in the science of law.
 - It involves a systematic search of legal materials, statutory, subsidiary and judicial pronouncements.



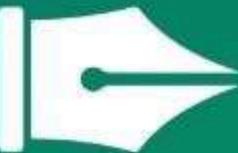
LOGICAL STEPS OF RESEARCH

For making advancement in the science of law, one needs to go into the 'underlying principles or reasons of the law'.

- An approach becomes systematic when a researcher follows scientific method.
- Research is systematic, because it follows certain steps that are logical in order.
- Understanding the nature of problem to be studied and identifying the related area of knowledge.
- Reviewing literature to understand how others have approached or dealt with the problem.
- Collecting data in an organized and controlled manner so as to arrive at valid decisions.
- Analyzing data appropriate to the problem.
- Drawing conclusions and making generalizations.

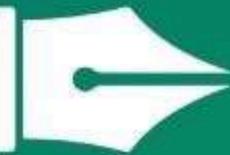
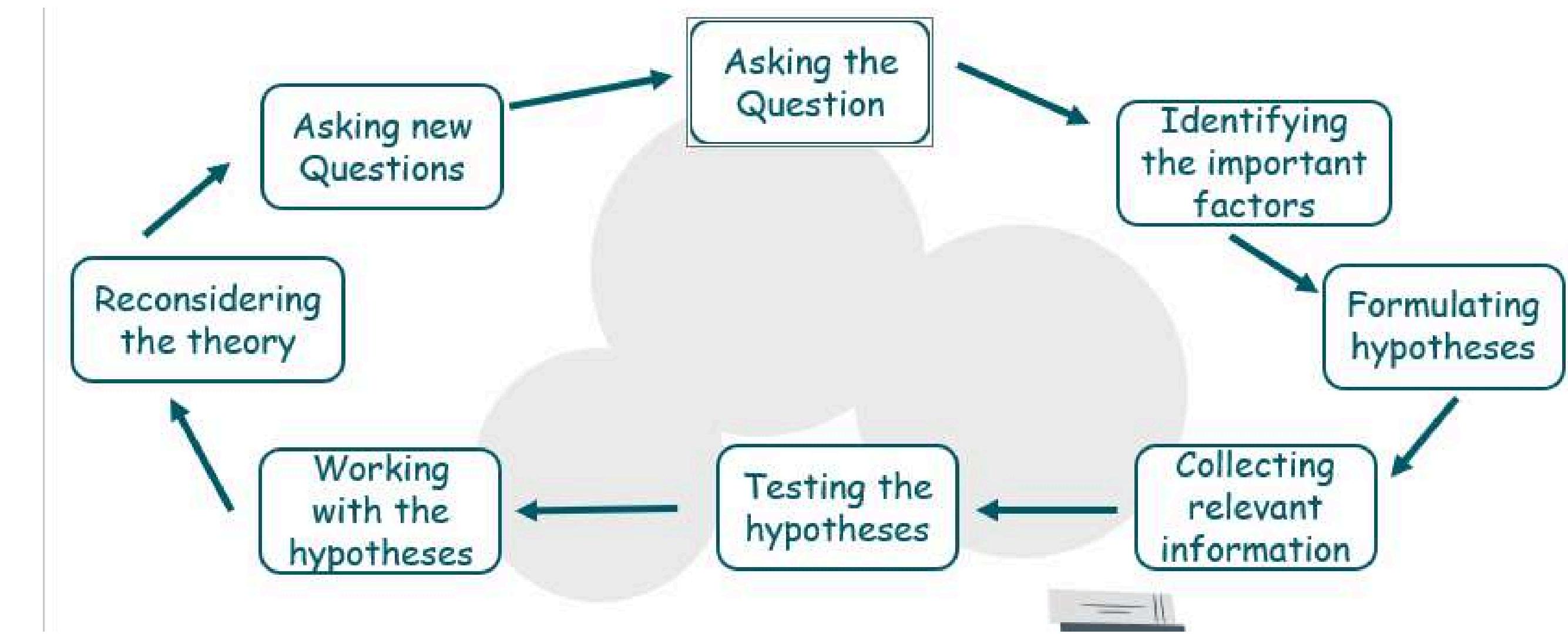


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WHERE DO I BEGIN RESEARCH?

The Answer includes in it each step of a course of action that begins with an analysis of the facts of a problem and concludes with the application and communication of the results of the investigation.

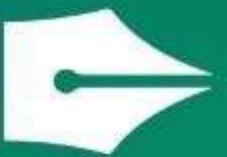


SCHEMATIC CHARACTERISTICS OF RESEARCH

- Problem Identification
- Reviewing Information
- Data Collection
- Analysis Data
- Drawing Conclusions



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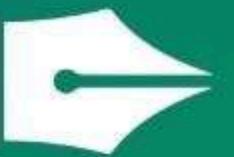


TIMELINE OF UNIT

- Meaning of Research
- Objective of Research
- Motivation in Research
- Types of Research
- Significance of Research
- Research Process
- Criteria of Good Research



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OBJECTIVES OF RESEARCH



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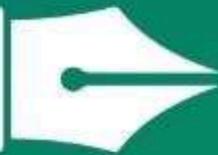
OBJECTIVES/ PURPOSES OF RESEARCH

- The principal objective or purpose of research in any field of inquiry is to add to what is known about the phenomenon under the investigation through the application of scientific methods.
- Purpose of research is the following-
 1. Exploration
 2. Description
 3. Causal Explanation
 4. Prediction.



EXPLORATION

- Exploration is finding out about some previously unexamined phenomenon. It is particularly useful when researchers lack a clear idea of the problems they will meet during the course of the study.
- Through exploration, researchers -
 1. Develop concepts more clearly
 2. Establish priorities
 3. Develop operational definitions
 4. Formulate research hypotheses, and
 5. Improve the final research design.



EXPLORATION

- Explorative studies tend toward loose structures with the objective of discovering future research tasks. One might think, for example, of initiating an exploratory research in the following situations
- Crime is increasing in the city at an alarming rate, the reasons for which remain unknown. The problem is ambiguous and what is actually happening is to be cleared. A new product is to be marketed, the manufacturer remains in worry if the product will be accepted by the people or not.

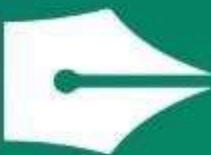


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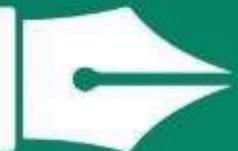
DESCRIPTION

- Description refers to the data based information-gathering activities.
- The situations and events which are described through studies are referred to as descriptive studies.
- Descriptive studies try to discover answers to the questions who, what, when, where and sometimes how.
- A descriptive study may be feasible in the following cases -
- What are the characteristics of the people who are involved in city crime? Are they young? Middle aged? Poor?
- Who are the potential buyers of the new product? Men or women? Urban people or rural people?



CAUSAL EXPLORATION

- An explanatory study goes beyond description and attempts to establish cause and-effect relationship between variables.
- It explains the reason for the phenomenon that describes study observed.
- Thus, if a researcher finds that communities having higher family size have higher child death, s/he is performing a descriptive study.
- If researcher is explaining why it is so and tries to establish cause-and effect relationship, s/he is performing an explanatory study.
- Such studies are also called causal studies. Following examples fit to causal studies -
- Why people are involved in crime? Can we explain this as a consequence of present crisis in the job market? Or for lack of parental care?
- Will buyers be motivated to purchase the new product in a new container? Can attractive advertisement motivate them?

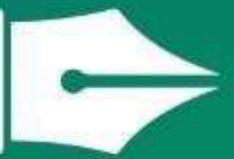


PREDICTION

Prediction seeks to answer when and in what situations the event will occur, if it can be provided plausible explanation for the vent in question.



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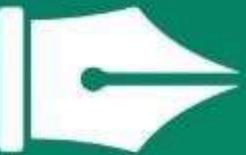
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CATEGORIES OF RESEARCH OBJECTIVES

- Research objective of a given research study may fall under either of the following broad categories.
- To...
- Gain familiarity with a phenomenon or to achieve new insights into it.
- Portray accurately the characteristics of a particular individual, situation or a group.
- Determine the frequency with which something occurs or with which it is associated.
- Test causal relationship between two or more than two facts or situations.
- Know and understand a phenomenon with a view to formulating the problem precisely.



SOME OTHERS OBJECTIVES OF RESEARCH

- To...
- Provide solutions to complex problems;
- Investigate laws of nature;
- Make new discoveries;
- Develop new products;
- Save costs;
- Improve our life, and
- Human desires.



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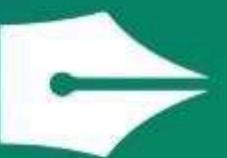


TIMELINE OF UNIT

- Meaning of Research
- Objectives of Research
- Motivation in Research
- Types of Research
- Significance of Research
- Research Process
- Criteria of good Research



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TYPES OF RESEARCH



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MOTIVATION IN RESEARCH

The possible motives for doing research may be either one or more of the following:

1. Desire to get a research degree along with its consequential benefits;
2. Desire to face the challenge in solving the unsolved problems, i.e., concern over practical problems initiates research;
3. Desire to get intellectual joy of doing some creative work;
4. Desire to be of service to society;
5. Desire to get respectability.



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TYPES OF RESEARCH

1. Descriptive vs. Analytical
2. Applied vs. Fundamental
3. Quantitative vs. Qualitative
4. Conceptual vs. Empirical
5. Some Other Types of Research



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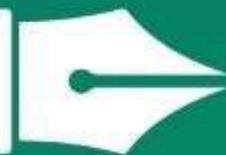


DESCRIPTIVE VS. ANALYTICAL

- Descriptive research includes surveys and fact-finding enquiries of different kinds..
- 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.
- The major purpose of descriptive research 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.



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DESCRIPTIVE VS. ANALYTICAL

- The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening.
- Most ex post facto research projects are used for descriptive studies in which the researcher seeks to measure such items as, for example, frequency of shopping, preferences of people, or similar data. Ex post facto studies also include attempts by researchers to discover causes even when they cannot control the variables.
- The methods of research utilized in descriptive research are survey methods of all kinds, including comparative and correlational methods.



APPLIED VS. FUNDAMENTAL

- Applied research aims at finding a solution for an immediate problem facing a society or an industrial/business organization, whereas fundamental research is mainly concerned with generalizations and with the formulation of a theory.
- Research can either be applied (or action) research or fundamental (to basic or pure) research.
- “Gathering knowledge for knowledge’s sake is termed ‘pure’ or ‘basic’ research.”
- Research concerning some natural phenomenon or relating to pure mathematics are examples of fundamental research. Similarly, research studies, concerning human behavior carried on with a view to make generalizations about human behavior, are also examples of fundamental research, but research aimed at certain conclusions (say, a solution) facing a concrete social or business problem is an example of applied research.



APPLIED VS. FUNDAMENTAL

- Research to identify social, economic or political trends that may affect a particular institution or the copy research (research to find out whether certain communications will be read and understood) or the marketing research or evaluation research are examples of applied research.
- Thus, the central aim of applied research is to discover a solution for some pressing practical problem, whereas basic research is directed towards finding information that has a broad base of applications and thus, adds to the already existing organized body of scientific knowledge.



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QUANTITATIVE VS. QUALITATIVE

- Quantitative research is based on the measurement of quantity or amount.
- Qualitative research, on the other hand, is concerned with qualitative phenomenon, i.e., phenomena relating to or involving quality or kind.
- When we are interested in investigating the reasons for human behaviour (i.e., why people think or do certain things), an important type of qualitative research.
- This type of research aims at discovering the underlying motives and desires, using in depth interviews for the purpose. Other techniques of such research are word association tests, sentence completion tests, story completion tests and similar other projective techniques.



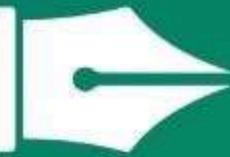
QUANTITATIVE VS. QUALITATIVE

- Attitude or opinion research i.e., research designed to find out how people feel or what they think about a particular subject or institution is also qualitative research.
- Qualitative research is specially important in the behavioral sciences where the aim is to discover the underlying motives of human behavior.
- Through such research we can analyze the various actors which motivate people to behave in a particular manner or which make people like or dislike a particular thing.
- It may be stated, however, that to apply qualitative research in practice is relatively a difficult job and therefore, while doing such research, one should seek guidance from experimental psychologists



CONCEPTUAL VS. EMPIRICAL

- Conceptual research is that related to some abstract idea(s) or theory.
- 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.
- We can also call it as experimental type of research.
- In such a research it is necessary to get at facts firsthand, at their source, and actively to go about doing certain things to stimulate the production of desired information. In such a research, the researcher must first provide himself with a working hypothesis or guess as to the probable results.



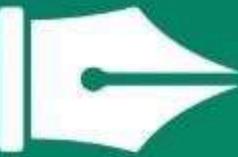
CONCEPTUAL VS. EMPIRICAL

- He then works to get enough facts (data) to prove or disprove his hypothesis.
- He then sets up experimental designs which he thinks will manipulate the persons or the materials concerned so as to bring forth the desired information.
- 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 proof is sought that certain variables affect other variables in some way.
- Evidence gathered through experiments or empirical studies is today considered to be the most powerful support possible for a given hypothesis.



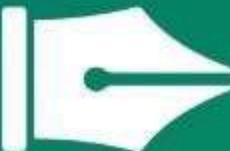
SOME OTHER TYPES OF RESEARCH

- All other types of research are variations of one or more of the above stated approaches, based on either the purpose of research, or the time required to accomplish research, on the environment in which research is done, or on the basis of some other similar factor.
- From the point of view of time, we can think of research either as 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. Research can be field setting research or laboratory research or simulation research, depending upon the environment in which it is to be carried out.



SOME OTHER TYPES OF RESEARCH

- Research can as well be understood as clinical or diagnostic research. Such research follow case-study methods or in-depth 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
- The research may be exploratory or it may be formalized.
- The objective of exploratory research is the development of hypotheses rather than their testing, whereas formalized research studies are those with substantial structure and with specific hypotheses to be tested.
- Historical research is that which 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.



SOME OTHER TYPES OF RESEARCH

- Research can also be classified as conclusion-oriented and decision-oriented.
- While doing conclusion oriented research, a researcher 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.
- Operations research is an example of decision oriented research since it is a scientific method of providing executive departments with a quantitative basis for decisions regarding operations under their control.



TIMELINE OF UNIT

- Meaning of Research
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RESEARCH METHODS VERSUS METHODOLOGY



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RESEARCH METHODS VERSUS METHODOLOGY

It seems appropriate at this juncture to explain the difference between research methods and research methodology.

- Research methods may be understood as all those methods/techniques that are used for conduction of research. Research methods or techniques thus, refer to the methods the researchers use in performing research operations.
- In other words, all those methods which are used by the researcher during the course of studying his research problem are termed as research methods.



RESEARCH METHODS VERSUS METHODOLOGY

Keeping this in view, research methods can be put into the following three groups:

1. In the first group we include those methods which are concerned with the collection of data. These methods will be used where the data already available are not sufficient to arrive at the required solution;
2. The second group consists of those statistical techniques which are used for establishing relationships between the data and the unknowns;
3. The third group consists of those methods which are used to evaluate the accuracy of the results obtained.



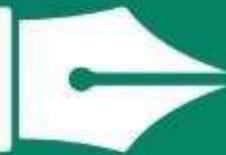
RESEARCH METHODS VERSUS METHODOLOGY

- Research methods falling in the above stated last two groups are generally taken as the analytical tools of research.
- Research methodology is a way to systematically solve the research problem.
- It may be understood as a science of studying how research is done scientifically.
- In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them.
- It is necessary for the researcher to know not only the research methods/techniques but also the methodology.



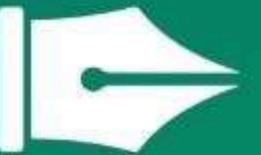
RESEARCH METHODS VERSUS METHODOLOGY

- Researchers not only need to know how to develop certain indices or tests, how to calculate the mean, the mode, the median or the standard deviation or chi-square, how to apply particular research techniques, but they also need to know which of these methods or techniques, are relevant and which are not, and what would they mean and indicate and why.
- Researchers also need to understand the assumptions underlying various techniques and they need to know the criteria by which they can decide that certain techniques and procedures will be applicable to certain problems and others will not.



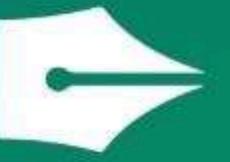
RESEARCH METHODS VERSUS METHODOLOGY

- All this means that it is necessary for the researcher to design his methodology for his problem as the same may differ from problem to problem. For example, an architect, who designs a building, has to consciously evaluate the basis of his decisions, i.e., he has to evaluate why and on what basis he selects particular size, number and location of doors, windows and ventilators, uses particular materials and not others and the like.
- we can say that research methodology has many dimensions and research methods do constitute a part of the research methodology.
- The scope of research methodology is wider than that of research methods. Thus, when we talk of research methodology we not only talk of the research methods but also consider the logic behind the methods we use in the context of our research study and explain why we are using a particular method or technique and why we are not using others so that research results are capable of being evaluated either by the researcher himself or by others.





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IMPORTANCE OF KNOWING HOW RESEARCH IS DONE



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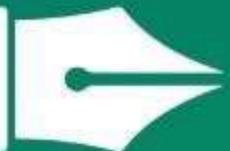
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RESEARCH APPROACHES

- The study of research methodology gives the student the necessary training in gathering material and arranging or card-indexing them, participation in the field work when required, and also training in techniques for the collection of data appropriate to particular problems, in the use of statistics, questionnaires and controlled experimentation and in recording evidence, sorting it out and interpreting it.
- In fact, importance of knowing the methodology of research or how research is done stems from the following considerations:
 - i. For one who is preparing himself for a career of carrying out research, the importance of knowing research methodology and research techniques is obvious since the same constitute the tools of his trade. The knowledge of methodology provides good training specially to the new research worker and enables him to do better research. It helps him to develop disciplined thinking or a 'bent of mind' to observe the field objectively. Hence, those aspiring for careerism in research must develop the skill of using research techniques and must thoroughly understand the logic behind them.



RESEARCH APPROACHES



(ii) Knowledge of how to do research will inculcate the ability to evaluate and use research results with reasonable confidence. In other words, we can state that the knowledge of research methodology is helpful in various fields such as government or business administration, community development and social work where persons are increasingly called upon to evaluate and use research results for action.

(iii) When one knows how research is done, then one may have the satisfaction of acquiring a new intellectual tool which can become a way of looking at the world and of judging every day experience. Accordingly, it enables use to make intelligent decisions concerning problems facing us in practical life at different points of time. Thus, the knowledge of research methodology provides tools to look at things in life objectively.

(iv) In this scientific age, all of us are in many ways consumers of research results and we can use them intelligently provided we are able to judge the adequacy of the methods by which they have been obtained. The knowledge of methodology helps the consumer of research results to evaluate them and enables him to take rational decisions



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SCIENTIFIC BASED OF RESEARCH



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SCIENTIFIC BASED OF RESEARCH

1. For clear perception about research one should know the meaning of scientific method.
2. Scientific method is the pursuit of truth as determined by logical considerations.
3. The ideal of science is to achieve a systematic interrelation of facts. Scientific method attempts to achieve this ideal by experimentation, observation, logical arguments from accepted postulates and a combination of these three in varying proportions.



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SCIENTIFIC BASED OF RESEARCH

- The scientific method is based on certain basic postulates which can be stated as follows. It...
 1. relies on empirical evidence,
 2. utilizes relevant concepts,
 3. is committed to only objective considerations,
 4. presupposes ethical neutrality,
 5. results into probabilistic predictions,
 6. is made known to all concerned through replication, and
 7. aims at formulating most general axioms.



SCIENTIFIC BASED OF RESEARCH

- Thus, scientific method implies an objective, logical and systematic method, i.e., a method free from personal bias or prejudice, a method to ascertain demonstrable qualities of a phenomenon capable of being verified, a method wherein the researcher is guided by the rules of logical reasoning, a method wherein the investigation proceeds in an orderly manner and a method that implies internal consistency.



SCIENTIFIC BASED OF RESEARCH



Research	Non-scientific Method	Scientific Method
General Approach	Intuitive	Empirical
Observation	Casual, uncontrolled	Systematic, controlled
Reporting	Biased, subjective	Unbiased, objective
Concepts	Ambiguous, with surplus meanings	Clear definitions, operational specificity
Instruments	Inaccurate, imprecise	Accurate, precise
Measurement	Not valid or reliable	Valid and reliable
Hypotheses	Un-testable	Testable
Attitude	Uncritical, accepting	Critical, skeptical



RESEARCH APPROACHES

- Plans and the procedure for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation.
- The overall decision involves which approach should be used to study a topic.
- Informing this decision should be the philosophical assumptions the researcher brings to the study; procedures of inquiry (called research designs); and specific research methods of data collection, analysis, and interpretation.



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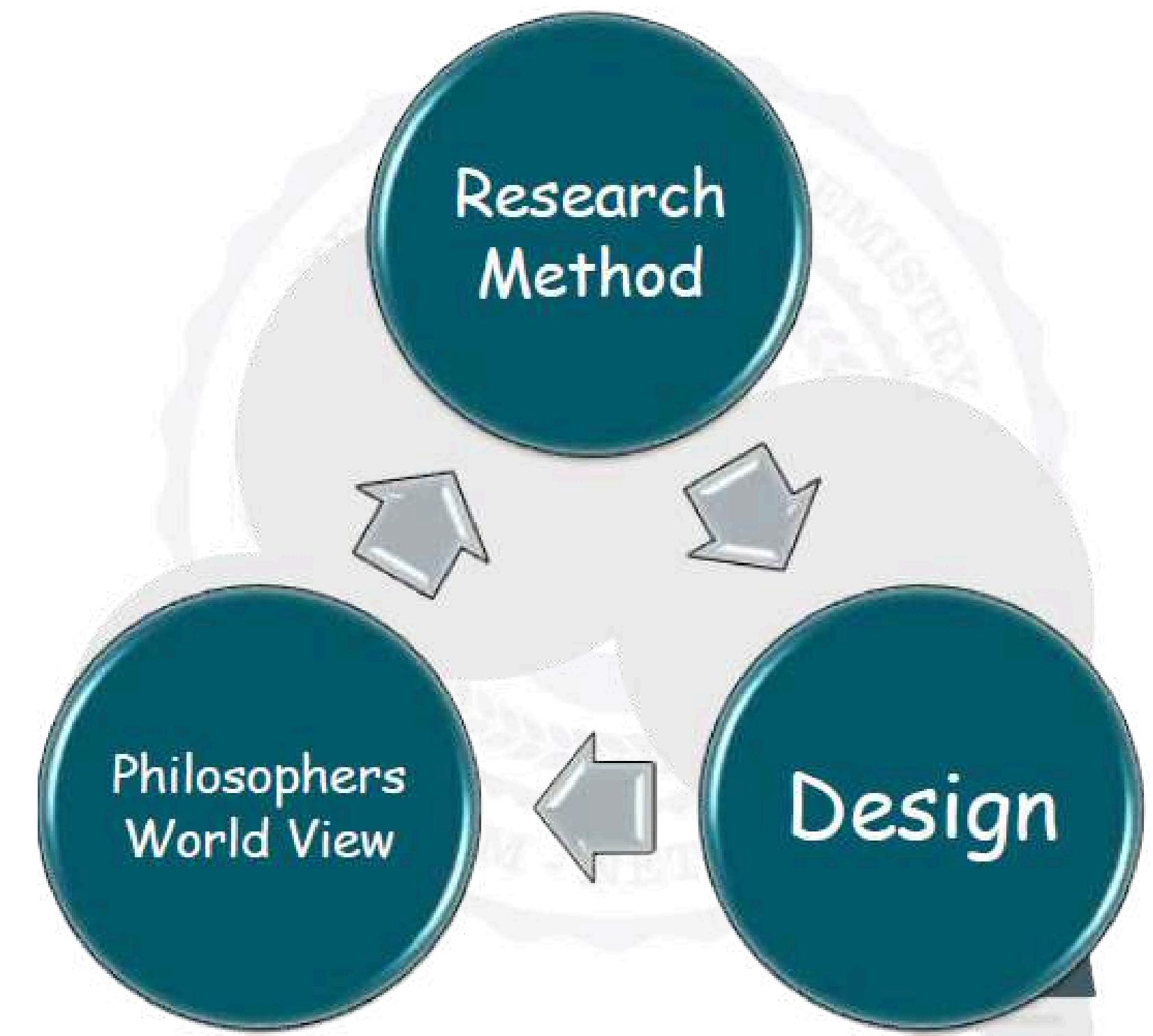


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RESEARCH APPROACHES



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RESEARCH APPROACHES

- Research is a systematic investigation to find answers to a problem. Sociological research is a systematic, careful, and controlled process of collecting information and answering questions.
- The different approaches we follow in Research Methodology are
 1. Quantitative approach
 2. Qualitative approach.
 3. Pragmatic approach (mixed methods)



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QUANTITATIVE APPROACH

- In the scientific method, quantitative research methods are employed in an attempt to establish general laws or principles. Such a scientific approach is often termed nomothetic and assumes social reality is objective and external to the individual.
- Quantitative research is empirical research where the data are in the form of numbers.
- Measures are systematically created before data collection and are standardized as far as possible.
- Procedures are standard, and replication is assumed.



QUANTITATIVE APPROACH

Theory

Hypothesis

Observation
or Test

Confirmation
or Rejection



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QUANTITATIVE APPROACH

- In the quantitative approach the generation of data is in quantitative form which can be subjected to meticulous quantitative analysis in a formal and rigid fashion.
- This approach can be further sub-classified into inferential, experimental and simulation approaches to research.
- It is often assumed that quantitative approaches draw on positivist ontologies.
- Quantitative approaches are strongly associated with objectivity. For Example, the interviews may be structured and analyzed in a quantitative manner.
- Numeric data is collected or when nonnumeric answers are categorized and coded in numeric form. Numerical data obtained through quantitative data approach facilitates comparisons between subjects or groups, as well as allow the determination of the extent of agreement or disagreement between respondents.



STRENGTHS OF QUANTITATIVE RESEARCH

- The quantitative as survey approach has significant advantages like it can be administered and evaluated quickly.
- Responses can be tabulated within a short timeframe. Quantitative data, which is collected rigorously, using the appropriate methods and analyzed critically shows more reliability.
- Quantitative research design is an excellent way of finalizing results and proving or disproving a hypothesis.
- After statistical analysis of the results, a comprehensive answer is reached, and the results can be legitimately discussed and published.
- Quantitative experiments also filter out external factors, if properly designed, and so the results gained can be seen as real and unbiased.



WEAKNESSES OF QUANTITATIVE RESEARCH

- Quantitative research has drawbacks to take account of people's unique ability to interpret their experiences, construct their own meanings and act on these.
- Quantitative experiments can be difficult and expensive and require a lot of time to perform.
- They must be carefully planned to ensure that there is complete randomization and correct designation of control groups.
- Quantitative studies usually require extensive statistical analysis, which can be difficult, due to most scientists not being statisticians. The field of statistical study is a whole scientific discipline and can be difficult for non-mathematicians.



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WEAKNESSES OF QUANTITATIVE RESEARCH

- Quantitative research design also tends to generate only proved or unproven results, with there being very little room for grey areas and uncertainty. For the social sciences, education, anthropology and psychology, human nature is a lot more complex than just a simple yes or no response.
- The research studying the perceptions and beliefs cannot be meaningfully reduced to numbers.
- Quantitative research is weak in understanding the context or setting in which people behave, something that qualitative research makes up for.



QUALITATIVE RESEARCH

- Qualitative, observational studies refer to traditions that base their research upon qualitative data (as opposed to quantitative research) and do not actively and purposely manipulate the phenomenon under investigation.
- Grounded theory studies and ethnographic methods are examples of this mode of research.
- Qualitative Research is primarily exploratory research and it has the aim of understanding experience as nearly as possible as its study subjects feel it. It is used to gain an understanding of underlying reasons, opinions, and motivations of subjects.
- It provides insights into the problem or helps to develop ideas or hypotheses for potential quantitative research.



QUALITATIVE RESEARCH

- Generally, the techniques of focus group interviews, projective techniques and depth interviews are used.
- Data from qualitative studies describes the qualities or characteristics of something.
- Qualitative research studies can provide the details about human behavior, emotion and personality characteristics that quantitative studies cannot match.
- Qualitative data includes information about user behaviors, needs, desires, routines and a variety of other information that is essential in designing a product that will actually fit into a user's life.
- Qualitative data are usually gathered by observation, interviews or focus groups, projective techniques, but may also be gathered from written documents and through case studies.



QUALITATIVE RESEARCH

- In qualitative research there is more emphasis on describes the qualities or characteristics of human behavior, emotion, personality characteristics, user behaviors, needs, desires, and routines. Participants in qualitative studies often involve smaller numbers of tools include and utilizes open-ended questionnaires interview guides.
- This type of research is best used to answer how and why questions and is not well suited to generalizables what, when and who questions.



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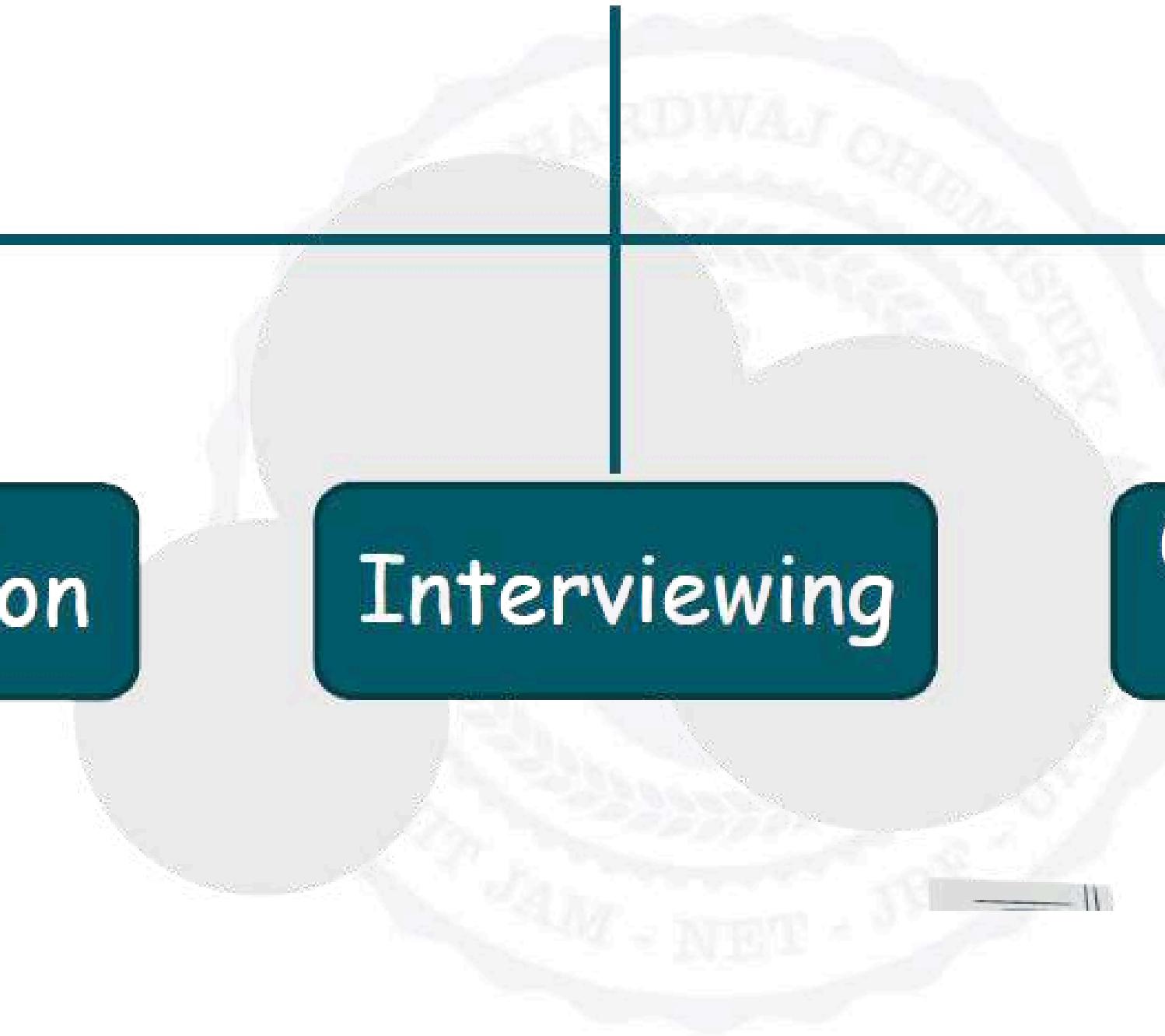
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QUALITATIVE RESEARCH

Observation

Interviewing

Case Studies Method



STRENGTHS OF QUALITATIVE APPROACH

- Qualitative techniques are extremely useful when a subject is too complex be answered by a simple yes or no hypothesis.
- These types of designs are much easier to plan and carry out cultural assessment i.e., ability to probe for underlying values, beliefs, and assumptions.
- The broader scope covered by these designs ensures that some useful data is always generated, whereas an unproved hypothesis in a quantitative experiment can mean that a lot of time has been wasted. Qualitative research methods are not as dependent upon sample sizes as quantitative methods; a case study, for example, can generate meaningful results with a small sample group.



WEAKNESS OF QUALITATIVE APPROACH

- Qualitative methods require a lot of careful thought and planning, to ensure that the results obtained are as accurate as possible.
- Qualitative data cannot be mathematically analyzed in the same comprehensive way as quantitative results, so can only give a guide to general trends.
- It is a lot more open to personal opinion and judgment, and so can only ever give observations rather than results.
- Any qualitative research design is usually unique and cannot be exactly recreated, meaning that they do lack the ability to be replicated.



PRAGMATIC APPROACH (MIXED METHODS)

- Researcher can use any of the methods, techniques and procedures typically associated with quantitative or qualitative research but researcher should be aware that every research method has its limitations and that the different approaches can be complementary.
- Researcher can use different methods at the same time or one after the other.
- For example, Researcher can start his research work based on empirical evidence with qualitative research like focus group discussion and then use the findings to construct a questionnaire to measure attitudes in a large scale sample with the aim of carrying out statistical analysis.



PRAGMATIC APPROACH (MIXED METHODS)

- Depending on which measures have been used, the data collected is analyzed in the appropriate manner.
- Mixing different approaches has the advantages of enabling triangulation, which is a common feature of mixed research methods studies.



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STRENGTHS OF PRAGMATIC APPROACH

- Provides strengths that counterbalance the weaknesses of both quantitative and qualitative research.
- By using both types of research, the strengths of each approach can make up for the weaknesses of the other.
- Provides a more complete and comprehensive understanding of the research problem by combining both quantitative and qualitative approaches.



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WEAKNESS OF PRAGMATIC APPROACH

- The research design can be very complex.
- Takes much more time and resources to plan and implement this type of research.
- It may be difficult to plan and implement one method by drawing on the findings of another.
- It may be unclear how to resolve discrepancies that arise in the interpretation of the findings.



SIGNIFICANCE OF RESEARCH

- “All progress is born of inquiry. Doubt is often better than overconfidence, for it leads to inquiry, and inquiry leads to invention” is a famous Hudson Maxim in context of which the significance of research can well be understood.
- Increased amounts of research make progress possible.
- Research inculcates scientific and inductive thinking and it promotes the development of logical habits of thinking and organization.
- The role of research in several fields of applied economics, whether related to business or to the economy as a whole, has greatly increased in modern times.



SIGNIFICANCE OF RESEARCH

- The increasingly complex nature of business and government has focused attention on the use of research in solving operational problems.
- Research, as an aid to economic policy, has gained added importance, both for government and business.
- Research provides the basis for nearly all government policies in our economic system.
- For instance, government's budgets rest in part on an analysis of the needs and desires of the people and on the availability of revenues to meet these needs.
- The cost of needs has to be equated to probable revenues and this is a field where research is most needed.



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SIGNIFICANCE OF RESEARCH

- Decision-making may not be a part of research, but research certainly facilitates the decisions of the policy maker. Government has also to chalk out programmers for dealing with all facets of the country's existence and most of these will be related directly or indirectly to economic conditions.
- The plight of cultivators, the problems of big and small business and industry, working conditions, trade union activities, the problems of distribution, even the size and nature of defense services are matters requiring research.
- Thus, research is considered necessary with regard to the allocation of nation's resources.



SIGNIFICANCE OF RESEARCH

- These day nearly all governments maintain large staff of research technicians or experts to carry on this work. Thus, in the context of government, research as a tool to economic policy has three distinct phases of operation, viz.,
 - (i) investigation of economic structure through continual compilation of facts;
 - (ii) diagnosis of events that are taking place and the analysis of the forces underlying them;
 - (iii) the prognosis, i.e., the prediction of future developments.
- Research has also its special significance in solving various operational and planning problems of business and industry.



SIGNIFICANCE OF RESEARCH

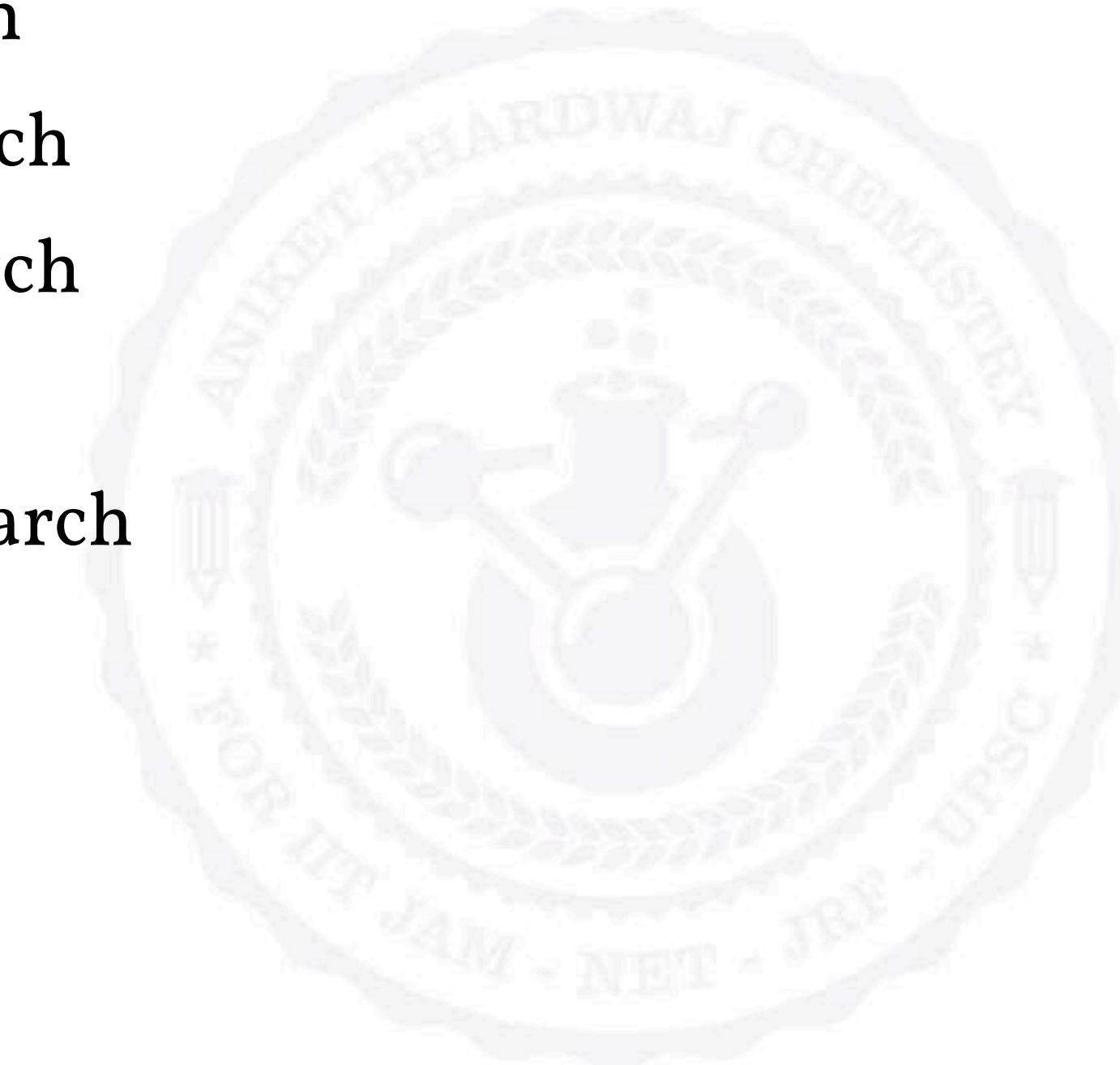
In addition to what has been stated above, the significance of research can also be understood keeping in view the following points:

- (a) To those students who are to write a master's or Ph.D. thesis, research may mean a careerism or a way to attain a high position in the social structure;
- (b) To professionals in research methodology, research may mean a source of livelihood;
- (c) To philosophers and thinkers, research may mean the outlet for new ideas and insights;
- (d) To literary men and women, research may mean the development of new styles and creative work;
- (e) To analysts and intellectuals, research may mean the generalisations of new theories.



TIMELINE OF UNIT

- Meaning of Research
- Objectives of Research
- Motivation in research
- Types of Research
- Significance of Research
- Research Process



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