Research methodology and IPR

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Module 1

- **Research Methodology**:

i. Meaning of Research,
ii. Objectives of research,
iii. Types of research,
iv. Research approaches,
v. Significance of research,
vi. Research Process: Formulating research problem, Research methods verses methodology, Research and scientific method.
vi. Criteria of good research.

- **Defining the Research Problem**:

i. What is a Research Problem?
ii. Selecting the Research Problem
iii. Necessity of Defining the Problem, Techniques Involved in Defining a problem.


Analysis
RESEARCH
Data

Definitions of Research

Research in common parlance refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic.	**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 specially through search for new facts in any branch of knowledge.**
Redman and Mory define research as a "systematized effort to gain new knowledge.	**Research as a movement, a movement from the known to the unknown. It is actually a voyage of discovery**	

Definitions of Research

According to Clifford Woody research comprises defining and redefining problems, formulating hypothesis or suggested solutions; collecting, organizing and evaluating data; making deductions and reaching conclusions; and at last carefully testing the conclusions to determine whether they fit the formulating hypothesis.	D. Slesinger and M. Stephenson in the Encyclopaedia of Social Sciences define research as "the manipulation of things, concepts or symbols for the purpose of generalizing to extend, correct or verify knowledge, whether that knowledge aids in construction of theory or in the practice of an art."
The search for knowledge through objective and systematic method of finding solution to a problem is research. The systematic approach concerning generalization and the formulation of a theory is also research.	Research' refers to the systematic method consisting of enunciating the problem, formulating a hypothesis, collecting the facts or data, analyzing the facts and reaching certain conclusions either in the form of solutions(s) towards the concerned problem or in certain generalizations for some theoretical formulation

Objectives 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 formulative 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).*

Motivation to do research

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.

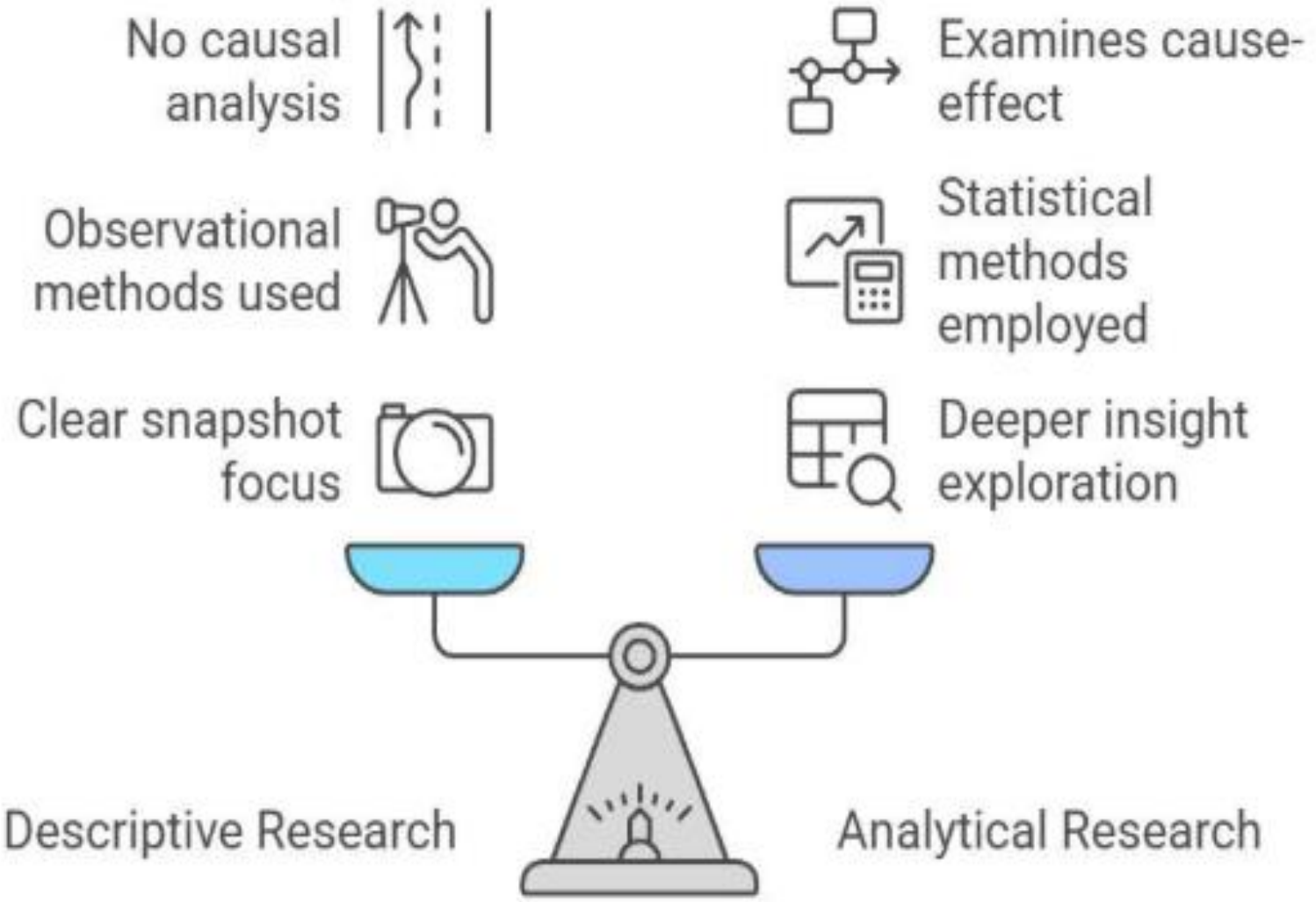
Types of research

- Research can be classified in various ways based on its purpose, methods, and environment.
- Understanding the different types of research is crucial for designing effective studies and drawing meaningful conclusions.
- This presentation will explore the key distinctions between the major types of research, providing a comprehensive overview to guide researchers and decision-makers.


Types of
RESEARCH
Applied Research
Exploratory Research
Descriptive Research
Action Research
Policy-Oriented Research
Correlational Research
Explanatory Research
Longitudinal Research
Fundamental and Basic Research Method

Descriptive vs. Analytical Research

Descriptive Research: Describe	Analytical Research: Analysis
• Descriptive research focuses on describing the current state of affairs, often through surveys and fact-finding inquiries. • Ex post facto studies : earthquake/flood impacts • The researcher has no control over the variables and simply reports what is happening. • This type of research is useful for understanding trends and patterns. • Focus on "How, what", No hypothesis needed Ex: frequency of shoping, which flavor of the product people likes. Ex: Effect of global warming	• Analytical research goes a step further, analyzing available facts and information to make critical evaluations. • The researcher has to use facts or information already available, and analyse these to make a critical evaluation of the material. • Focused on understanding the "How, why" behind phenomena.Hypotheais needed Ex: why such flovour of product people like the most, which age group like most and like less Ex: Effect of global warming on polar Ice caps: in 1950 ,100polar ice caps


No causal analysis
Observational methods used
Clear snapshot focus
Examines cause-effect
Statistical methods employed
Deeper insight exploration
Descriptive Research
Analytical Research

Applied Vs Fundamental research

Applied	Fundamental research
• Aims at finding a solution for an immediate problem facing a society or an industrial/business organisation, research aimed at certain conclusions (say, a solution) facing a concrete social or business problem is an example of applied research. • Applying fundamentals to real life • Ex: if friction is there between road and tyres of vehicle , brake can be applied • How to reduce poverty in cities, • How to minimize crimes	• Fundamental research, also known as basic or pure research, is concerned with expanding the overall body of scientific knowledge. • It seeks to uncover new theories and make generalizations, rather than solving specific problems. • Gathering knowledge for knowledge's sake • No solution to the practical problem Ex: • Study of **gravity, friction** • Is performance is always associated with motivation • Academic research (Literature Revies)

APPLIED research

- aims at finding solutions to pressing problems that society, organizations, and the like are facing by employing well-known theories and principles
- Conducted to determine the possible uses or applications of the findings of basic research

Example:
A study that attempts to determine the impact of mining on the socio-economic life of the indigenous peoples.

FUNDAMENTAL/BASIC Research

Example:
An investigation that looks at the factors that trigger depression.

- Basic research provides us with a systematic and deep insight into a problem that can have practical significance

Quantitative vs. Qualitative:

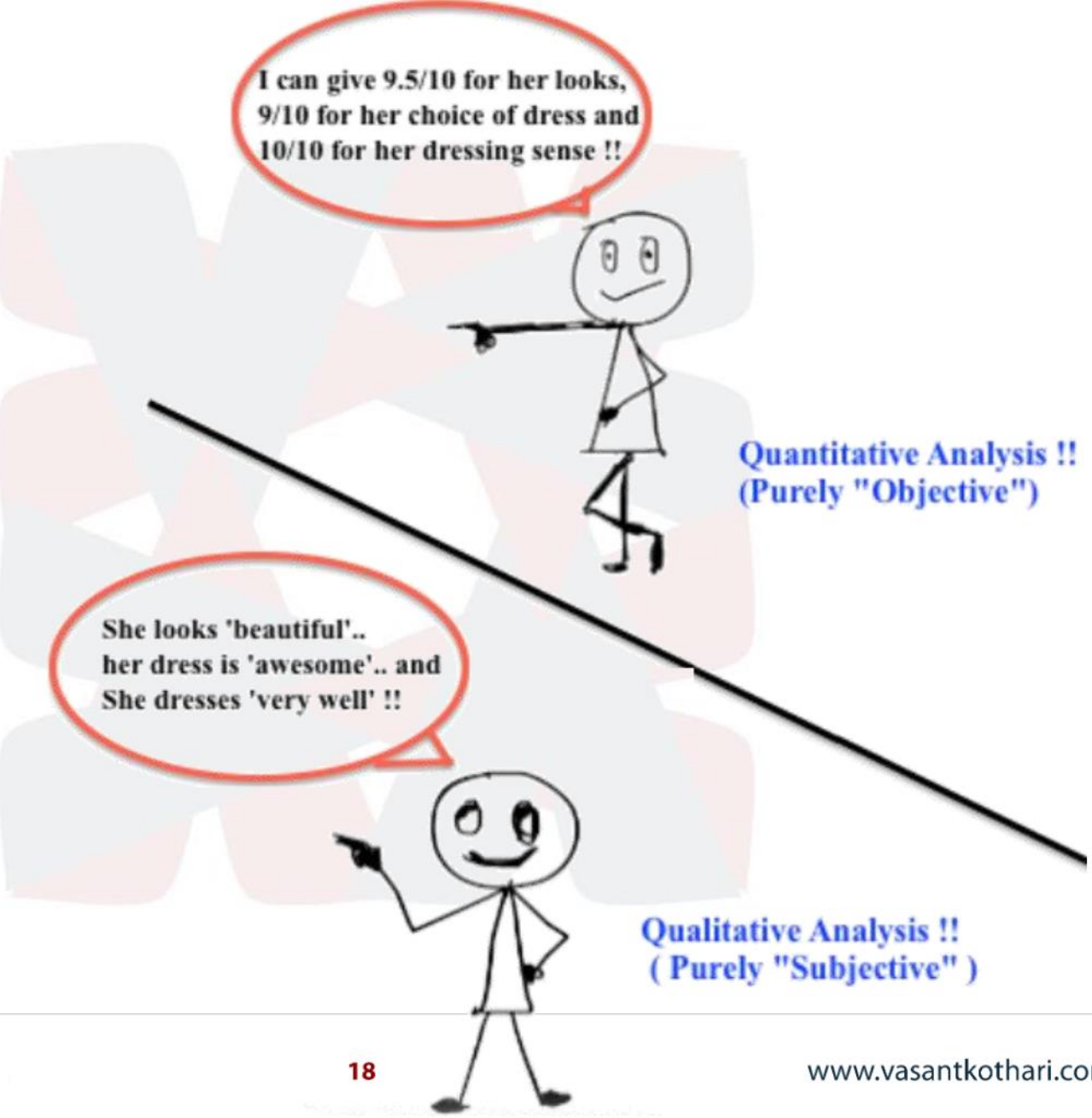
Quantitative- quantity	Qualitative-quality
Quantitative research is based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity, such as statistics and numerical data. Ex: -Time consumption by using new technology for new product (Increased/Decreased) -Number of students in class - Assigning stars 1 to 5 for a product	Qualitative research, on the other hand, is concerned with qualitative phenomena, such as investigating the reasons behind human behavior. It often uses in-depth interviews and projective techniques to uncover underlying motives and desires. Ex: Whether employees are satisfied with current reward system of a company -How much are the coaching center classes croweded -How the product works: review

Quantitative data example

- The customer has clicked on the button 13 times.
- The engineer has resolved 34 support tickets today.
- The team has completed 7 upgrades this month.
- 14 cartons of eggs were purchased this month.

Qualitative data example

- My manager has curly brown hair and blue eyes.
- My coworker is funny, loud, and a good listener.
- The customer has a very friendly face and a contagious laugh.
- The eggs were delicious.



Here is a good and bad example of a research methodology for quantitative methods study

✗ Data will be collected from students on their sleep patterns and performance. Then, it will be analyzed

Very vague and not detailed

✓ We will survey 500 undergraduates on their average sleep hours, sleep quality, and GPA. Using statistical software, we'll analyze correlations and regressions to assess how sleep duration and quality relate to GPA, with sleep quality as a possible moderator. This will help us see if better or longer sleep links to improved academic performance

Here is a good and bad example of a research methodology for qualitative methods study

✗ Data will be gathered from employees about remote work and analyzed.

Very vague and not detailed

✓ We will conduct semi-structured interviews with 30 remote employees from various tech organizations, selected for diverse experience and roles. Questions will cover benefits, challenges, and impacts of remote work on job satisfaction and productivity. Transcripts will be thematically analyzed in NVivo to identify common attitudes, helping us understand remote work's influence on satisfaction and productivity.

Here is a good and bad example of a research methodology for mixed methods study

✗ We will collect data from teachers and students about the effectiveness of technology use in the classroom.

Very vague and not detailed

✓ We will use a mixed-method approach, surveying 200 high school students and 20 teachers on student engagement and teachers' views of technology's impact on learning. Additionally, in-depth interviews with 10 teachers will explore specific uses, benefits, and challenges. Survey data will be analyzed statistically, while interview data will undergo thematic analysis. This study aims to assess if technology boosts engagement and learning and to identify factors influencing its success or limitations.

RESEARCH PAPERS THAT EMPLOY A QUANTITATIVE RESEARCH METHOD ARE REPLETE WITH TABLES AND GRAPHS.

Quantitative research method is widely employed in the social sciences:

- SOCIOLOGY
- PSYCHOLOGY
- GENDER STUDIES
- DEVELOPMENT STUDIES
- ECONOMICS
- COMMUNITY HEALTH
- DEMOGRAPHY
- POLITICAL SCIENCE
- EDUCATION

Qualitative research method

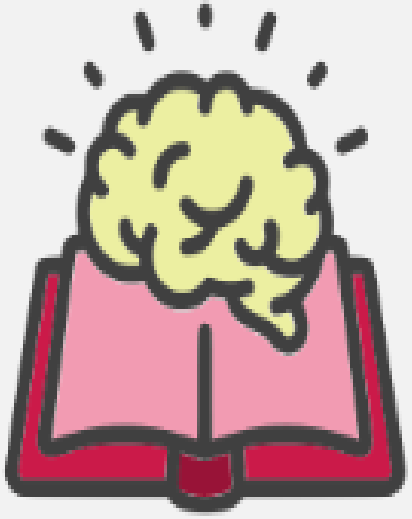
- Non-numerical
- Descriptive
- Exploratory
- Narrative

- In terms of purpose, a qualitative research method primarily aims to know the meaning, nature, and dynamics of a particular phenomenon or situation under investigation.

Conceptual Vs Empherical

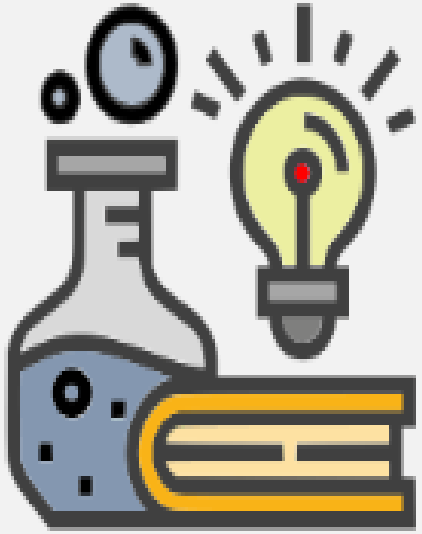
Conceptual-Concept	Empherical-experiment
Conceptual research is related to abstract ideas or theories. It is often used by philosophers and thinkers to develop new concepts or reinterpret existing ones. Research is conducted by observing and analyzing already available information on a topic under study No practical experiments is conducted EX: Effect of heat on water , liquid-> boiling->evaporates	Empirical research, on the other hand, relies on experience or observation. It is data-driven and involves experiments or observations to test hypotheses and draw conclusions. Ex: Amount of heat needed to boil water (ex: 100 degree)

CONCEPTUAL VS EMPIRICAL RESEARCH



Conceptual Research

Conceptual research involves analyzing existing data and theories without conducting empirical tests, focusing on unique concepts or thoughts.



Empirical Research

Empirical research gathered information from real experiences and observed phenomena, relying on actual involvement rather than speculation or beliefs.

Other Types of research

Time-based: depending on the time frame of the study. • **One-time** :the research is confined to a single time-period .Ex: Population researches, effect of global warming in 2024 • **Longitudinal**, research is carried on over several time-periods. Ex: , effect of global warming in last decades market trends , customer satisfaction employees motivation, brand awareness etc	***Environment-based*** Research can be conducted in a field setting, laboratory, or through simulation, depending on the environment.
Research can be • **Exploratory/ In- Depth/Diagnostic/Clinical**: the development of hypotheses Ex: causes of global warming (gases, pollution etc) • **Formalized**: substantial structure and with specific hypotheses to be tested	***Historical :*** Historical research utilizes historical sources to study ideas and events of the past including the philosophy of persons and groups at any remote point of time.
Conclusion-oriented : 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. The researcher in this case is not free to embark upon research according to his own inclination

RESEARCH APPROACHES

Quantitative- quantity	Qualitative-quality
Quantitative research is based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity, such as statistics and numerical data. Ex: -Time consumption by using new technology for new product (Increased/Decreased) -Number of students in class - Assigning stars 1 to 5 for a product	Qualitative research, on the other hand, is concerned with qualitative phenomena, such as investigating the reasons behind human behavior. It often uses in-depth interviews and projective techniques to uncover underlying motives and desires. Ex: Whether employees are satisfied with current reward system of a company -How much are the coaching center classes croweded -How the product works: review

Quantitative Approach :Classification

Inferential approach	Experimental approach	Simulation approach
Research is to form a data base from which to infer characteristics or relationships of population. This usually means survey research where a sample of population is studied (questioned or observed) to determine its characteristics, and it is then inferred that the population has the same characteristics Ex: For restaurant , reviews of bad, good and average ,then one reviews out of three on an average taken	characterised by much greater control over the research environment and in this case some variables are manipulated to observe their effect on other variables. Ex: Temperature needed to boil the water	involves the construction of an artificial environment within which relevant information and data can be generated. This permits an observation of the dynamic behaviour of a system (or its sub-system) under controlled conditions. Ex: Real time scenario in simulation

EX: Quantitative

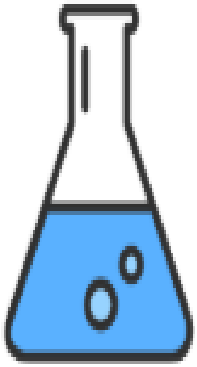
❓ Research Question	How does social media usage affect the academic performance of college students?
🗂️ Type of data to collect?	Numeric data: Hours of social media use per day and student's GPA scores.
👥 Who to collect it from?	A sample of college students
📝 How to collect it?	Administer online survey asking daily social media use (in hours) and current GPA.
📊 How to analyze it?	Use statistical software (SPSS) to determine if there is a statistically significant correlation between social media use and GPA.

Ex: Qualitative

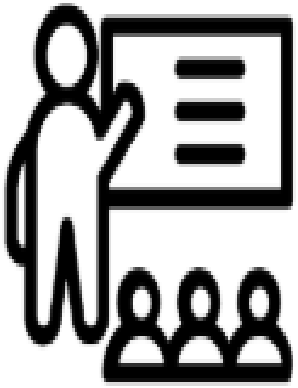
❓ Research Question	What are the experiences of health care workers in treating patients during a pandemic?
🗂️ Type of data to collect?	Narrative data: Interviews on personal experiences, challenges, and coping mechanisms of health care workers during a pandemic.
👥 Who to collect it from?	A sample of healthcare workers
📝 How to collect it?	Conduct in-depth semi-structured interviews with healthcare professionals working in hospitals and clinics during a pandemic.
📊 How to analyze it?	Analyze the data with content analysis software (NVivo) and apply thematic analysis coding to derive themes.

Significance of research

- Research is crucial for progress and invention, driven by inquiry and doubt.
- It encourages **scientific**, inductive thinking and logical organization.
- Research has become more important in applied economics, solving business and government issues.
- It serves as a foundation for government policies, including budgeting and resource allocation.
- Research helps in formulating alternative policies and assessing their potential impacts.

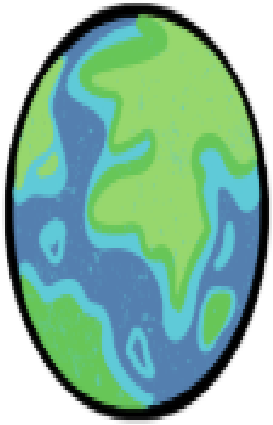


Your Study



Research Field

Business Opportunities



Society

Broadening Significance

Significance of research

- Research supports **policy-making**, even if decision-making itself isn't a direct part of research.
- Government programs are closely linked to economic conditions, requiring research for effective solutions.
- Research helps allocate **national resources** effectively, covering various sectors like agriculture, business, industry, and defense
- Collecting data on the **nation's economic** and social structure is essential and involves complex research efforts.
- Government research has three phases: investigating the economic structure, diagnosing current events, and forecasting future developments.

Significance of research

- Research is crucial in solving **business problems** through operations, market, and motivational **research**, aiding decision-making. Market research helps businesses formulate policies on purchasing, production, and sales by understanding market trends and structure.
- Operations research uses mathematical and analytical techniques to solve optimization problems in business, like cost reduction and profit maximization.
- Business budgeting, sales **forecasting**, and production planning are all grounded in research, replacing intuitive decisions with scientific ones.
- Social science research seeks to understand human interactions and provide practical solutions for improving social relationships and **addressing** societal issues.

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

- 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;
- To professionals in research methodology, research may mean a source of livelihood;
- To philosophers and thinkers, research may mean the outlet for new ideas and insights;
- To literary men and women, research may mean the development of new styles and creative work;
- To analysts and intellectuals, research may mean the generalizations of new theories.

Research method and 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
- Since the object of research, particularly the applied research, it to arrive at a solution for a given problem, the available data and the unknown aspects of the problem have to be related to each other to make a solution possible

Research method and 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;

   Ex **Interviwes, Questionnaires ,surveys,observation, Documents and records,focus groups, Oral histories**

2. The **second group** consists of those statistical techniques which are used for establishing relationships between the data and the unknowns;

   Ex: (Quantitative) Regression, Co-relation , (Qualitative) Content analysis,Narrative analysis, Discourse analysis

3. The **third group** consists of those methods which are used to evaluate the accuracy of the results obtained.

Type	*Methods*	*Techniques*
1. Library Research	(i) Analysis of historical records	Recording of notes, Content analysis, Tape and Film listening and analysis.
	(ii) Analysis of documents	Statistical compilations and manipulations, reference and abstract guides, contents analysis.
2. Field Research	(i) Non-participant direct observation	Observational behavioural scales, use of score cards, etc.
	(ii) Participant observation	Interactional recording, possible use of tape recorders, photo graphic techniques.
	(iii) Mass observation	Recording mass behaviour, interview using independent observers in public places.
	(iv) Mail questionnaire	Identification of social and economic background of respondents.
	(v) Opinionnaire	Use of attitude scales, projective techniques, use of sociometric scales.
	(vi) Personal interview	Interviewer uses a detailed schedule with open and closed questions.
	(vii) Focused interview	Interviewer focuses attention upon a given experience and its effects.
	(viii) Group interview	Small groups of respondents are interviewed simultaneously.
	(ix) Telephone survey	Used as a survey technique for information and for discerning opinion; may also be used as a follow up of questionnaire.
	(x) Case study and life history	Cross sectional collection of data for intensive analysis, longitudinal collection of data of intensive character.
3. Laboratory Research	Small group study of random behaviour, play and role analysis	Use of audio-visual recording devices, use of observers, etc.

Basis Of Comparison	Research Method	Research Methodology
Meaning	Research Method implies the methods employed by the researcher to conduct research.	Research methodology signifies way to efficiently solving research problems.
What is it?	Behavior and instrument used in the selection and construction of the research technique.	Science of understanding, how research is performed methodically.
Encompasses	Carrying out experiment, test, surveys and so on.	Study different techniques which can be utilized in the performance of experiment, test, surveys etc.
Comprise	of Different investigation techniques.	Entire strategy towards achievement of objective
Objective	To discover solution to research problem.	To apply correct procedures so as to determine solutions.

Research methodology

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.*

Research and Scientific Method

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

Scientific method-basic postulates

- Empirical evidence: Experiment to test
  Ex: H20->100C
- Relevant concepts: Evoporation of water/ gravity ect
- objective considerations:
  - objective:Fact-> India lost in home series after 12 years
  - subjective (opinion) ,Ex: because of batsman /bowler /pitch
- probabilistic predictions: probability of winning/lose/draw/not started due to weather condition
- critical scrutiny : Same result to get by different researchers: 100c needed to get water boil in India/ Africa

Importance of Knowing How Research is Done

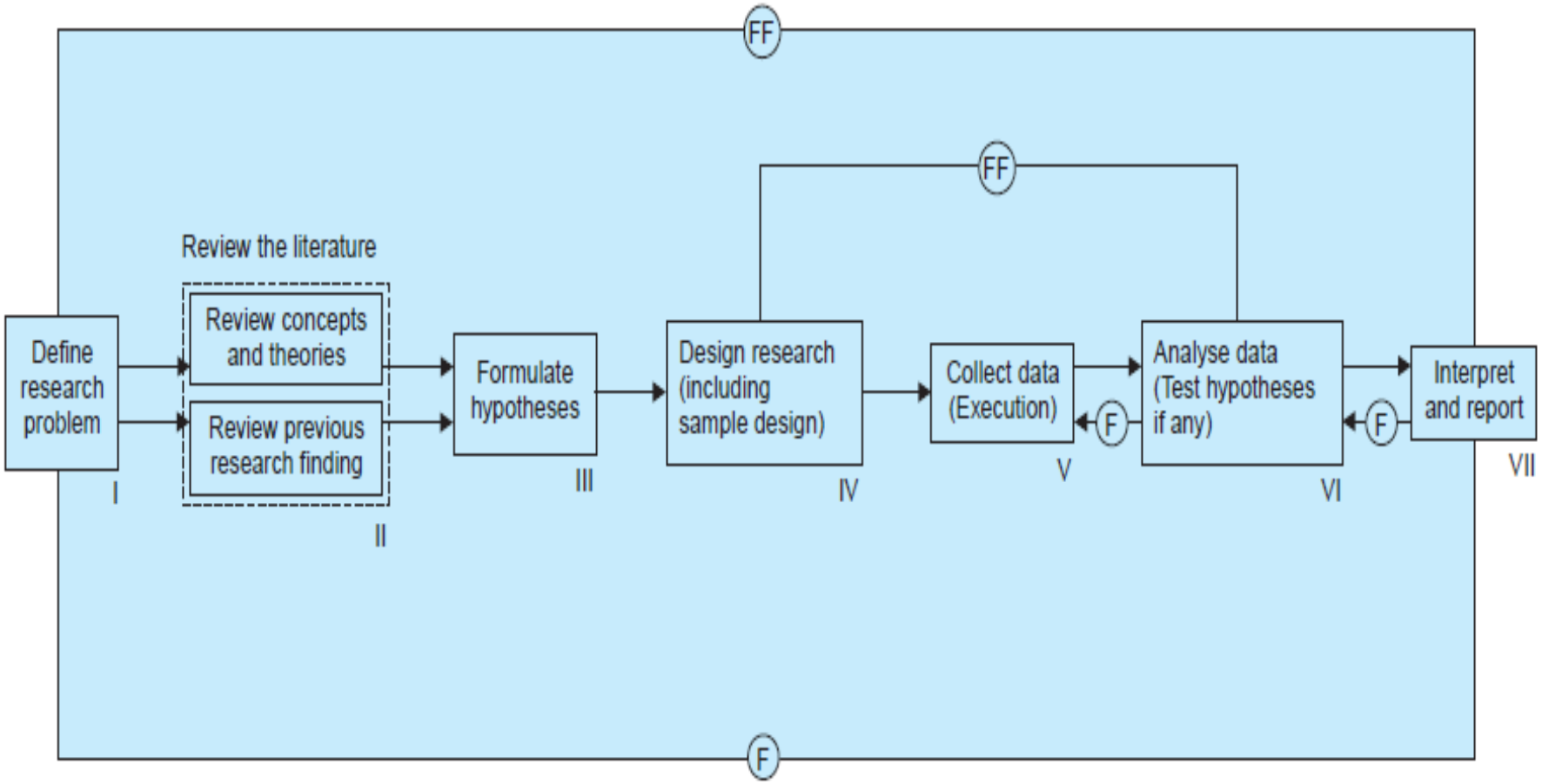
- Knowledge of research methodology is essential for aspiring researchers as it equips them with the tools and techniques necessary for effective and objective research.
- Understanding research methods helps individuals develop disciplined thinking and improves their ability to conduct and evaluate research confidently.
- This knowledge is valuable in various fields like government, business administration, and social work, where research results inform decision-making.
- Learning research methodology offers an intellectual tool for understanding and analyzing everyday experiences and practical problems objectively.
- In a scientific age, familiarity with research methods enables consumers of research results to critically evaluate their validity and make informed, rational decisions.

Criteria of Good Research

1. The purpose of the research should be clearly defined and common concepts be used.
2. The research procedure used should be described in sufficient detail to permit another researcher to repeat the research for further advancement, keeping the continuity of what has already been attained.
3. The procedural design of the research should be carefully planned to yield results that are as objective as possible.
4. The researcher should report with complete frankness, flaws in procedural design and estimate their effects upon the findings.
5. The analysis of data should be sufficiently adequate to reveal its significance and the methods of analysis used should be appropriate. The validity and reliability of the data should be checked carefully.
6. Conclusions should be confined to those justified by the data of the research and limited to those for which the data provide an adequate basis.
7. Greater confidence in research is warranted if the researcher is experienced, has a good reputation in research and is a person of integrity

Research Process

RESEARCH PROCESS IN FLOW CHART



Where (F) = feed back (Helps in controlling the sub-system to which it is transmitted)

(FF) = feed forward (Serves the vital function of providing criteria for evaluation)

Formulating the research problem

- Research problems can be categorized into those related to states of nature and relationships between variables.
- The first step in research is selecting and defining a specific problem
- The formulation of a research problem involves understanding it thoroughly and rephrasing it into analytical terms for clarity and precision.
- Researchers should consult colleagues, experts, or guides to refine the problem and define it in operational terms, especially in academic or organizational settings.
- Reviewing both conceptual and empirical literature helps the researcher become familiar with the problem and available data for operational purposes.
- Defining the research problem unambiguously is critical as it guides data collection, analysis methods, and the overall research direction, ensuring relevance and accuracy.

Extensive literature survey:

- After formulating the research problem, a brief summary should be written down, especially for thesis submissions requiring approval from relevant committees.
- A thorough literature survey is essential, utilizing abstracting and indexing journals, as well as published and unpublished bibliographies.
- Relevant academic journals, conference proceedings, government reports, and books should be explored, depending on the research topic.
- The literature review process often leads from one source to another, building a comprehensive understanding of the subject.
- Reviewing similar earlier studies is crucial, and having access to a well-stocked library greatly aids this process.

Development of working hypotheses

How does one go about developing working hypotheses? The answer is by using the following approach.

(a) Discussions with colleagues and experts about the problem, its origin and the objectives in seeking a solution;

(b) Examination of data and records, if available, concerning the problem for possible trends, peculiarities and other clues;

(c) Review of similar studies in the area or of the studies on similar problems; and

(d) Exploratory personal investigation which involves original field interviews on a limited scale with interested parties and individuals with a view to secure greater insight into the practical aspects of the problem.

Preparing the research design

The function of research design is to provide for the collection of relevant evidence with optimum effort, time and expenditure.

The preparation of the research design, appropriate for a particular research problem, involves usually the consideration of the following:

(i) the means of obtaining the information;

(ii) the availability and skills of the researcher and his staff (if any);

(iii) explanation of the way in which selected means of obtaining information will be organized and the reasoning leading to the selection;

(iv) the time available for research; and

(v) the cost factor relating to research, i.e., the finance available for the purpose.

Determining sample design

A sample design is a definite plan determined before any data is actually collected for obtaining a sample from a given population. Sample designs can be either probability or non-probability.

- *Deliberate sampling*
- *Simple random sampling*
- *Systematic sampling*
- *Stratified sampling*
- *Quota sampling*
- *Cluster sampling and area sampling*
- *Multi-stage sampling*
- *Sequential sampling*

Collecting the data

- Primary data can be collected either through experiment or through survey.
- If the researcher conducts an experiment, he observes some quantitative measurements, or the data, with the help of which he examines the truth contained in his hypothesis.
-

Collecting the data

But in the case of a survey, data can be collected by any one or more of the following ways:

(i) By observation
(ii) Through personal interview
(iii) Through telephone interviews
(iv) By mailing of questionnaires
(v) Through schedules

Execution of the project

- The execution of a research project is crucial for collecting adequate and reliable data, and it should be done systematically and within the timeline.
- If using structured questionnaires, coding the questions and answers allows for efficient machine processing of data.
- For data collected through interviews, proper selection and training of interviewers is essential, with the help of instruction manuals and regular field checks.
- The survey should be monitored for unanticipated factors, and steps must be taken to maintain statistical control, ensuring data accuracy.
- To address non-response, methods like creating a list of non-respondents and taking a sub-sample for follow-up with expert assistance can be effective.

Hypothesis testing

- After analyzing the data, the researcher can test the hypotheses formulated earlier to see if the facts support or contradict them.
- Various statistical tests, such as the Chi-square test, t-test, and F-test, are available for hypothesis testing, depending on the nature of the research.
- The chosen test(s) will either lead to the acceptance or rejection of the hypothesis.
- If no hypotheses were initially formulated, generalizations based on the data can be stated as new hypotheses for future testing.
- Hypothesis testing is a key step in confirming or refining the research findings.

Generalizations and interpretation

- If a hypothesis is tested and upheld several times, it may be possible for the researcher to arrive at generalization, i.e., to build a theory. As a matter of fact, the real value of research lies in its ability to arrive at certain generalizations.
- If the researcher had no hypothesis to start with, he might seek to explain his findings on the basis of some theory.
- It is known as interpretation. The process of interpretation may quite often trigger off new questions which in turn may lead to further researches.

Preparation of the report or the thesis:

- The layout of the report should be as follows: (*i) the preliminary pages; (ii) the main text,* and (*iii) the end matter.*
- *In its preliminary pages the report should carry title and date followed by acknowledgements* and foreword.
- Then there should be a table of contents followed by a list of tables and list of graphs and charts, if any, given in the report.

Problems Encountered by Researchers in India

- *The lack of a scientific training in the methodology of research*
- There is *insufficient interaction*
- *There is the need for generating the confidence that the information/data obtained from a business unit will not be misused*
- *Research studies overlapping one another are undertaken quite often for want of adequate information*
- *There does not exist a code of conduct for researchers and inter-university and interdepartmental* rivalries are also quite common.

Problems Encountered by Researchers in India

- Many researchers in our country also face *the difficulty of adequate and timely secretarial assistance, including computerial assistance*
- *Library management and functioning is not satisfactory at many places and much of* the time and energy of researchers are spent in tracing out the books, journals, reports, etc., rather than in tracing out relevant material from them
- *There is also the problem that many of our libraries are not able to get copies of old and new Acts/Rules, reports and other government publications in time*

Problems Encountered by Researchers in India

- *There is also the difficulty of timely availability of published data from various* government and other agencies doing this job in our country.
- There may, at times, take place *the problem of conceptualization and also problems* relating to the process of data collection and related things.

Questions

1. Briefly describe the different steps involved in a research process.

2. What do you mean by research? Explain its significance in modern times.

3. Distinguish between Research methods and Research methodology.

4. Describe the different types of research, clearly pointing out the difference between an experiment and a survey.

5. Write short notes on:

i. Design of the research project;

ii. Ex post facto research;

iii. Motivation in research;

iv. Objectives of research;

v. Criteria of good research;

vi. Research and scientific method.

6. "Empirical research in India in particular creates so many problems for the researchers". State the problems that are usually faced by such researchers.(*Raj. Univ. EAFM., M. Phil. Exam., 1979)*

Questions contd..

7. **"A research scholar has to work as a judge and derive the truth and not as a pleader who is only eager** to prove his case in favor of his plaintiff." Discuss the statement pointing out the objectives of research.
8. "Creative management, whether in public administration or private industry, depends on methods of inquiry that maintain objectivity, clarity, accuracy and consistency". Discuss this statement and examine the significance of research".(*Raj. Univ. EAFM., M. Phil. Exam., 1978)*
9. **"Research is much concerned with proper fact finding, analysis and evaluation." Do you agree with this** statement? Give reasons in support of your answer.
10. **It is often said that there is not a proper link between some of the activities under way in the world of** academics and in most business in our country. Account for this state of affairs and give suggestions for improvement.