




Research Methodology Part 1

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Meaning of Research

- In common parlance research refers to a search for knowledge
- It can also be defined as scientific and systemic search for pertinent information on a specific topic
- Research, in reality, is an art of scientific investigation

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Definitions

- There are many definitions :
 - 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:
 - Systemetized effort to gain new knowledge
 - Some people consider research as a movement
 - A movement from the known to unknown
 - It is actually a voyage of discovery

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Definitions 2/4

- According to Clifford Woody:
 - Research comprises:
 - Defining and redefining problems
 - Formulating hypothesis or suggested solution
 - A systematized effort to gain new knowledge
 - A research is an academic activity
 - Therefore the term should be used in a technical sense
 - Collecting, organizing and evaluating data
 - Making deductions and reaching conclusions
 - And at last carefully testing the conclusion to determine whether they fit the formulating hypothesis

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Definitions 3/4

- D. Slesinger and M. Stephenson in the Encyclopedia 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
- Research is thus
 - An original contribution to the existing stock of knowledge making for its advancement

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General Characteristics of Research

- The following characteristics may be gathered from the definitions of 'Research'
 - It gathers new knowledge or data from primary or first-hand source
 - It places emphasis upon the discovery of general principles
 - It is an exact systematic and accurate investigation
 - It uses certain valid data gathering devices
 - It is logical and objective
 - The researcher eliminates personal feelings and preferences

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General Characteristics of Research

- It endeavours to organise data in quantitative terms
- Research is patient and unhurried activity
- The researcher is willing to follow his procedure to the conclusions that may be unpopular and bring social disapproval
- Research is carefully recorded and reported
- Conclusions and generalisations are arrived at carefully and cautiously

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Objectives of Research

- The purpose of research is:
 - to discover answers to questions through the application of scientific procedure
- The main aim of research is
 - To find out the truth which is hidden and which is not discovered as yet
- Each research study has its own specific purpose
 - The research objectives may be thought of falling into the following broad groups:

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Objectives of Research (2/3)

- To gain familiarity with a phenomenon or to achieve new insights into it
 - This types of studies are termed as exploratory or formulative research studies
- To portray accurately the characteristics of a particular individual, situation or a group
 - This types of studies are known as descriptive research studies

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Objectives of Research (3/3)

- To determine the frequency with which something occurs or with which it is associated with something else
 - This type of studies are known as diagnostic research studies
- To test a hypothesis of a causal relationship between variables
 - This type of studies are known as hypothesis-testing research studies

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Motivation in Research

- What makes people to undertake research?
 - This is a question of fundamental importance
 - The possible motives for doing research may be one or more of the following:
 - Desire to get a research degree along with its consequential benefits
 - Desire to face the challenge in solving the unsolved problems
 - That is concern over practical problems initiates research
 - Desire to get intellectual joy of doing some creative work
 - Desire to be of service to society
 - Desire to get respectability
 - It is a requirement in all post graduate medical and other PG courses and Ph.D. programmes

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Types of Research 1/ 10

- The basic types of research are as follows:
 1. Descriptive vs Analytical
 - Descriptive research includes surveys and fact-finding enquires of different kinds
 - 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
 - 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

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Types of Research 2/10

- Most ex post facto research projects are used for descriptive studies
 - *Example,*
 - frequency of shopping,
 - preferences of people, or
 - similar data
 - **Attempts to discover causes**
 - They, however, cannot control the variables
 - **Research methods used are**
 - Survey methods of all kinds
 - Comparative and correlational methods

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Types of Research 3/10

- Analytical research
 - **Facts or information already available are used**
 - These are critically evaluated
- 2. **Applied vs. Fundamental**
 - **Research can either be applied (or action) research or fundamental (to basic or pure)) research**
 - Applied research aims at finding a solution for an immediate problem
 - Fundamental research is mainly concerned with generalisation and with the formulation of a theory

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Types of Research 4/10

3. **Quantitative Vs. Qualitative**
 - **Quantitative research is based on measurement of quantity or amount**
 - It is applicable to phenomenon that can be expressed in terms of quantity (as numbers)
 - **Qualitative research is concerned with qualitative phenomenon**
 - This relates to quality or kind
 - For example: investigating the reasons human behaviour
 - (Why people think or do certain things)
 - Motivation research is an important type of qualitative research
 - Attitude or opinion research

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Types of Research 5/10

4. **Conceptual Vs. Empirical**
 - **Conceptual research is that related to some abstract idea(s) or theory**
 - Philosophers and thinkers use this method to develop new concepts or to re-interpret existing ones
 - **Empirical research relies on experience or observation alone**
 - Many times due regard to system or theory is not paid
 - It is data based research,
 - The conclusions arrived at is verifiable by observation or experiment
 - This may also be called experimental type of research

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Types of Research 6/10

- In empirical research it is necessary to get at facts firsthand
 - Working hypothesis is needed
 - Empirical research is appropriate when proof is sought that certain variables affect other variables in some way
 - Experiments or empirical studies is considered to be the most powerful support possible for a given hypothesis
5. **Some other types of research**
 - **All other types of research are variations of one or more of the above approaches**
 - **These variations are due to the following factors:**

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Types of Research 7/10

- Based on either the purpose of the research or the time required to accomplish research
 - On the environment in which research is done, or
 - On the basis of some other similar factors
6. **From the point of view of time:**
 6. **Cross Sectional (One-time) research or longitudinal research**
 - In cross sectional research it is confined to a single time period
 - In longitudinal research, the research is carried on over several time periods

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Types of Research 8/10

7. **Field-setting research or laboratory research or simulation research**
 - These types of research depend on the environment in which it is to be carried out
8. **Clinical or Diagnostic research**
 - Such research follow case-study methods or in-depth approaches to reach basic causal relations
 - Such studies usually go deep into the causes of things or events that interest us
 - These studies use small sample and very deep data gathering devices

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Types of Research 9/10

- This type of research can be exploratory or formalised
 - The objective of exploratory research is the development of hypothesis rather than their testing
 - Formalised research studies are those with substantial structure and with specific hypothesis to be tested
9. **Historical**
 - **Historical research**
 - Utilises historical sources like documents, remains, etc to study events or ideas of the past
 - These research may also use philosophy of persons or groups at any remote point of time

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Types of Research 10/10

1. **Conclusion-oriented and decision oriented**
 - **Conclusion oriented research**
 - The researcher is free to pick up a problem,
 - Redesign the enquiry as he proceeds
 - Researcher may be prepared to conceptualise as he wishes
 - **Decision-oriented research**
 - This is always for the need of a decision maker
 - Researcher here is not free to embark upon research as per his own inclination
 - Operations research is an example of decision oriented research
 - It is a scientific method of providing executive departments with a quantitative basis for decision regarding operations under their control

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Research Methodology: Introduction (1/5)

- **Research Approaches**
 - **Two approaches:**
 - Quantitative approach
 - Qualitative approach
- **Quantitative approach**
 - **Involves generation of data in quantitative form**
 - **Data is subjected to rigorous quantitative analysis**
 - **The analysis is done in rigid and formal manner**

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Research Methodology: Introduction (2/5)

- **There are three sub-classifications of quantitative approach**
 1. **Inferential**
 - **The purpose is**
 - to form a data base
 - From this inference is made about the population
 - This means a survey research where a sample of population is studied (questioned or observed)
 - The characteristics of the sample is determined
 - It is then inferred that the population has the same characteristics

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Research Methodology: Introduction (3/5)

2. **Experimental**
 - There is much greater control over the research environment
 - Some variables are manipulated to observe their effect on other variables
3. **Simulation**
 - An artificial environment is created
 - From within this relevant information and data can be generated
 - This permits an observation of the dynamic behaviour of a system under controlled conditions

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Research Methodology: Introduction (4/5)

- The term simulation in the context of business or social science application refers to:
 - The operation of a numerical model that represents the structure of a dynamic process
 - “Given the value of initial condition, parameters and exogenous variables, a simulation is run to represent the behaviour of the process over time”
 - Simulation approach can also be useful in building models for understanding future conditions

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Research Methodology: Introduction (5/5)

- Qualitative approach
 - It is concerned with subjective assessment of attitudes, opinions and behaviour
 - Research in such a situation is a function of researcher’s insights and impressions
 - This approach generates results either in
 - Non-quantitative form, or
 - In the form which are not subject to rigorous quantitative analysis
 - Generally, the techniques of focus group interviews, projective techniques and depth interviews are used

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Significance of research (1/2)

- It helps in decision making in all field of social, governmental and many other human activities.
- Research has its special significance in solving:
 - Various operational and
 - Planning problems of business and industry
- In addition, research has significance in following areas:
 - To those students who are to write a master’s or Ph.D thesis
 - To professionals in research methodology, research may mean a source of livelihood

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Significance of research (2/2)

- To philosophers and thinkers,
 - research may mean the outlet for new ideas and insights
- To literary men and women,
 - research may mean development of new styles and creative work
- To analysts and intellectuals,
 - research may mean generalisation of new theories
- Thus research is
 - Fountain of knowledge for the sake of knowledge
 - An important source of providing guidelines for solving different business, governmental and social problems

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Thank you