

# Research Methodology

## Unit 1 Introduction to research

### A. Meaning of research

- ▶ Research is composed of two words - Re+search, which means search again or to search for new facts or verify previous ones(old facts)
- ▶ Research is systematized effort to gain new knowledge
- ▶ Research is careful or diligent search. Research is a way of thinking and finding answers to the questions that come into your mind.
- ▶ Research is careful study and investigation for the purpose of discovering and explaining new knowledge
- ▶ Research is defined as the creation of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts, methodologies and understandings.

## Definition of research

- ▶ Research is careful investigation and inquiry specially through search for new facts in any branch of knowledge - Advanced Learners Dictionary
- ▶ Research refers to sysematic and objective attempt, which is used to study a problem for the purpose of deriving general principles - F. A. Ogg
- ▶ Research is an art of scientific investigation - C.K. Kothari
- ▶ Research is a pursuit of trust with the help of study, observation, comparison and experiment, the search for knowledge through objective and systematic method of finding solutions to a problem - C K. Kothari
- ▶ Research refers to systematic investigation in pursuit of knowledge or confirmation in any field - J Drever

- ▶ Research may be defined as the systematic method of discovering new facts or verifying old facts, their sequences, interrelationships, casual explanations and the natural law which govern them - P.V.Young
- ▶ Research systematic, controlled, empirical and critical investigation of hypothetical propositions about the presumed relations among natural phenomena - Kerlinger and Lee
- ▶ Research is a systematic and objective analysis and recording of observations that may lead to the development of theory - J.W.Best and J.V. Khan
- ▶ Research is defined as the creation of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts, methodologies and understandings

- ▶ Research as a serious study of a subject that is intended to discover new facts or test ideas
  - Longman Dictionary of contemporary English
- ▶ A studious inquiry or examination, especially; investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or law in the light of new facts or practical application of such new or revised theories or law
  - Webster online Dictionary
- ▶ Research is a systematic, formal, rigorous and precise process employed to gain solutions to problems or to discover and interpret new facts and relationships
  - Waltz and Bansell

- ▶ Research is a process of steps used to collect and analyze information to increase our understanding of a topic or issue. It consists of three steps: Pose a question, collect data to answer the question, and present an answer to the question  
- Creswell
- ▶ In the broadest sense of the word, the definition of research includes any gathering of data, information and facts for the advancement of knowledge  
-Martyn Shuttleworth
- ▶ Research is the process of looking for a specific question in an organized, objective, reliable way  
- Payton

## Characteristics of research

1. Problem solving
2. Discovering new facts verifying old facts
3. Cause -effect relationships
4. Developing methods and techniques
5. Empirical and rational. Based on facts
6. Logical and organized
7. Purposive

8. Testability

9. Objectivity

10. Controlled

- ▶ It should be undertaken in a scientific manner, biases and subjectivity should be avoided
- ▶ The process should follow valid and verifiable tools, techniques and procedures
- ▶ The process follows the logical and sequential procedures that are established by the academic discipline in which you are conducting research

## Goals of research

1. Description
2. Prediction
3. Explanation
4. Evaluation
5. Theory building
6. Developing methods
7. Exploration



## B. Types of research (Applied and fundamental/basic research)

### Applied Research

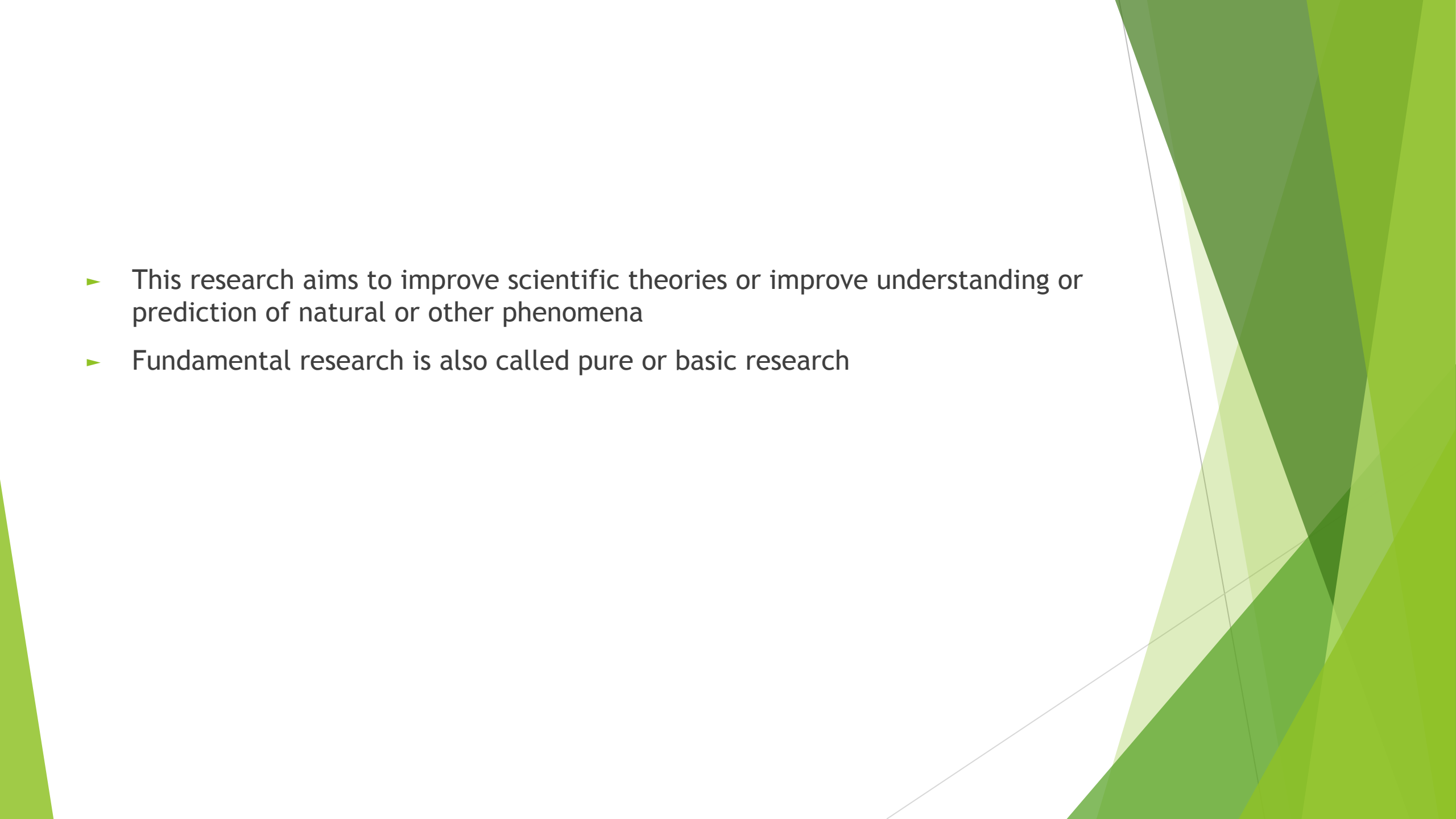
- ▶ It consists of research designed to focus scientific research tools on a practical, real world problem identified by some client with some practical outcome in mind
- ▶ The primary focus of applied research is on making recommendations about programs or policies that might be implemented or changed or about how to change behaviour
- ▶ The overall focus of applied research is to direct research tools toward the end of social intervention
- ▶ As for goals, it focuses on evaluation, description and evaluation
- ▶ Applied research is the application of outcome in concern sectors or field

## Types of Applied research

1. Program evaluation
2. Need assessment
3. Social impact assessment
4. Social indicators
5. Cost-based analysis

## Fundamental/basic/pure research

- ▶ It refers to research whose purpose is to advance our knowledge about human social behaviour with little concern for any immediate practical benefits that might result
- ▶ The primary focus of this research is to develop theories of human social behaviour and testing hypothesis derived from those theories
- ▶ This research attempts to develop theories that explain how societies work and why people behave the way they do
- ▶ The goals of such research is to subject theories to the process of theory verification

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- The background of the slide features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic visual effect.
- ▶ This research aims to improve scientific theories or improve understanding or prediction of natural or other phenomena
  - ▶ Fundamental research is also called pure or basic research

# C. Scientific research process

- ▶ Scientific research process consists of series of actions or steps necessary to carry out research effectively
- ▶ In broad sense, there are five major scientific research process which are;
  1. Defining problem
  2. Reviewing literature
  3. Formulating hypothesis/research questions
  4. Selecting the research design and then collecting and analysing data
  5. Developing conclusion or building concepts/theories

## 1. Defining problem

- ▶ Realizing and sensing problem
- ▶ First of all, decide the issue of problem formulation
- ▶ Another element of problem formulation is to shape a concerns into a specific researchable questions
- ▶ Also justify your prblem that you are going to solve, or questions or issues that you are seeking answers

## 2. Reviewing literature

- ▶ Review of previous studies related to topic and problems
- ▶ It means, these are the information collected from secondary sources
- ▶ Literature may be general, specific, empirical, theoretical
- ▶ Literature review are normally done for formulation of hypothesis and research questions, to define and justify problems, to relate to empirical findings etc.

### 3. Formulating hypothesis/research questions

- ▶ After literature review, we develop hypothesis and research questions
- ▶ Hypothesis refers to the relationships between two variables, e.g. cigarette smoking is the cause of lung cancer
- ▶ Hypothesis may be accepted or rejected
- ▶ If our research is exploratory, then we develop research questions. we formulate objectives and collect data according to research questions, e.g. what are the causes of lung cancer



#### 4. Selecting the research design and then collecting and analysing data

- ▶ Research design is the plan, or framework or strategy or outline of research
- ▶ Research design involves the key issues like who will be studied?, how these people are selected?, what information will be gathered?; in simple words;

1. Selection of field site for data collection
2. Nature of data(qualitative or quantitative)
3. Types of data(primary or secondary)
4. Data collection tools(observation, interview, questionnaire, focus group discussion etc.)
5. Population and sample selection
6. Data analysis(editing, classifying or categorization and interpretation)

## 5. Developing conclusion or building concepts/theories

- ▶ Develop your conclusion on the basis of collected facts and evidences
- ▶ Conclusions are made from data analysis
- ▶ Conclusion is the major outcome of research
- ▶ Show your cause- effect relationships
- ▶ Conclusion may be in the form of summary, abstract, concepts, or theories

## Steps of the research process

Step 1: Identify the Problem. ...

Step 2: Review the Literature. ...

Step 3: Clarify the Problem. ...

Step 4: Clearly Define Terms and Concepts. ...

Step 5: Define the Population. ...

Step 6: Develop the Instrumentation Plan. ...

Step 7: Collect Data. ...

Step 8: Analyze the Data.

# D Management research methods

- ▶ Management research is an important sub sector of research and it encompasses market research, financial research, accounting research, operation research, human resource resarch etc.
- ▶ Management research is systematic and organized investigation collected to resolve problematic issues in or interrelated among the different areas of management(Sekaran and Bougie 2013)
- ▶ The main purpose of management research is to facilitate dcision making process and reduce uncertainty when business strategy is being planned, and to monitor performance after the strategy has been put in operation
- ▶ Types of management research are policy research, managerial research, action research and evaluation research

## 1. Action research

- ▶ Action research involves a continuous gathering and analyzing research data during the normal ongoing operations of an organization
- ▶ It feeds the simultaneous results into the organizations, it helps in changing its mode of functioning
- ▶ Features
  1. Address practical problems
  2. Generates new knowledges
  3. Enacts changes
  4. It is participatory
  5. Relies on a cyclical process(knowledge, learning and implementation)

## Objectives of action research

- ▶ to feed the information into organization to improve functioning
- ▶ to improve managerial actions
- ▶ to support future courses of action

## Data requirements and analysis

- ▶ Continuous gathering and analysis of data
- ▶ Problem specific data (opinion surveys, observation, satisfaction level, morale surveys, frustration index)
- ▶ Focus group, interview, questionnaire

## Research output

- Recommendation of actions to be taken with regard to;
  1. Organizational structure
  2. Rules
  3. Reward and punishment system
  4. Performance evaluation criteria
  5. Work environment

## 2. Evaluation research

- Evaluation research is oriented towards formal and objective measurement of the extent to which a given action, activity, or program has achieved its original objective
- It is closely related with policy research in which policies, objectives, strategies and programs are examined

### Objectives

- to measure achievements against the objectives
- to identify gaps and problem areas
- to suggest the improvements(required)



## Data requirements and analysis

- ▶ Micro level data(program utilization level, comparative performance)
- ▶ Internal surveys
- ▶ Documentary studies
- ▶ Focus groups
- ▶ Interviews
- ▶ Questionnaire

## Research output

- ▶ Identification of program strengths and weakness
- ▶ Recommendation for program improvement

## Policy research

### Objectives

- ▶ to formulate major policy proposals
- ▶ to establish their priorities
- ▶ to identify their implications

### Data requirement and analysis

- ▶ Macro level data about environmental forces, overall organizational situation and competitive standing of the organization
- ▶ Longitudinal(regular) data
- ▶ Time series data(interval) - Delphi(structured communication technique or method), predictions(econometric models), projections(parameters)

## Research output

- ▶ Identifications of policy actions
- ▶ Identification of policy priorities for the organization

### 3. Managerial research

- ▶ Managerial research is related to the specific problem of limited scope for which management has the need of additional information on which to base a decision
- ▶ This type of research is focused on one particular activity, scheme, or project launched by the management

#### Objectives

- ▶ to study the ongoing operations or projects
- ▶ to help in improving managerial effectiveness
- ▶ to help in decision making

## Data requirements and analysis

- ▶ Specific and detailed data about the operations or projects
  - ▶ Data collection through MIS
  - ▶ Collection of qualitative data
  - ▶ Exploring the situation for in-depth understanding
1. Survey research methods
  2. Observational methods
  3. Experimental methods for testing of alternatives

## Research output

- ▶ Identification of the problem situation
- ▶ Identification of decision options
- ▶ Precise recommendation for actions to be taken

## E. Project work(meaning, objectives, methods of field and project work- exploratory/descriptive, case study, feasibility study)

### Meaning

- ▶ Project work is defined as an individual or collaborate enterprise that is carefully planned and designed to achieve a particular aim
- ▶ Project work is a series of activities to study, to do research and to act by themselves using their abilities, interests, personal interests and aptitudes
- ▶ Project work is also a specific plan or design which undertakes a definitely formulated piece of research, or other activities
- ▶ Project work is a learning experience which aims to provide students with opportunity to synthesize knowledge from various areas of learning, and critically and creativity apply it to real life situations
- ▶ Project work is a piece of planned work or an activity that is finished over a period of time and intended to achieve particular purpose

- ▶ Project work is a wrk systems that are constituted by teams within or across organizations to acomplish particular tasks under time constraints
- ▶ Projects are performed by people, constrained by limited resources, and planned, executed, and controlled
- ▶ A project is a temporary endeavor undertaken to create a unique product or service
- ▶ Temporary means that every project has a definite beginning and a definite ending

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## Objectives of project work

1. to solve problem
  2. to analyze needs
  3. to suggest solutions
  4. to last social change
- ▶ A well formulated project objectives provides concrete descriptions of the project effects at the outcome level
  - ▶ It was developed in particular process which is accepted by target group
  - ▶ Project objective describes the project outcomes, intended and direct, short and medium term effects on the target groups

- ▶ Project objectives must lie within the scope of the project and one must be able to directly attribute the effects to the project
- ▶ The project objective is often formulated in terms of the project's utility for the target group
- ▶ It also makes sense to formulate the project objectives as a situation to be achieved in the future
- ▶ The project objective also ought to describe an outcome, meaning the effect or change that the project is supposed to cause for the target group


# Methods of field and project work

Steps of project work(D. F. Booth 1986)

1. Stimulus: stimulate your interests in the project
2. Definition of project objectives : what achieves/outcomes
3. Skills work : knowledge of data collection and write up
4. Design of materials ; interview, questionnaire, literature review
5. Group activities
6. Collating information : reading and discussion what was found
7. Organization of materials : format/body of writing
8. Final presentation

## The common methods of field and project work

1. Topic selection
2. Problem formulation
3. formulation of objectives
4. Limitations
5. Research design
6. Methodology(site selection, data collection tools, sampling, .....)
7. Data collection
8. Data analysis
9. Report writing, presentation and submission



► We use 5 W and How for field work

► 5 W

1. What

2. Who/whom

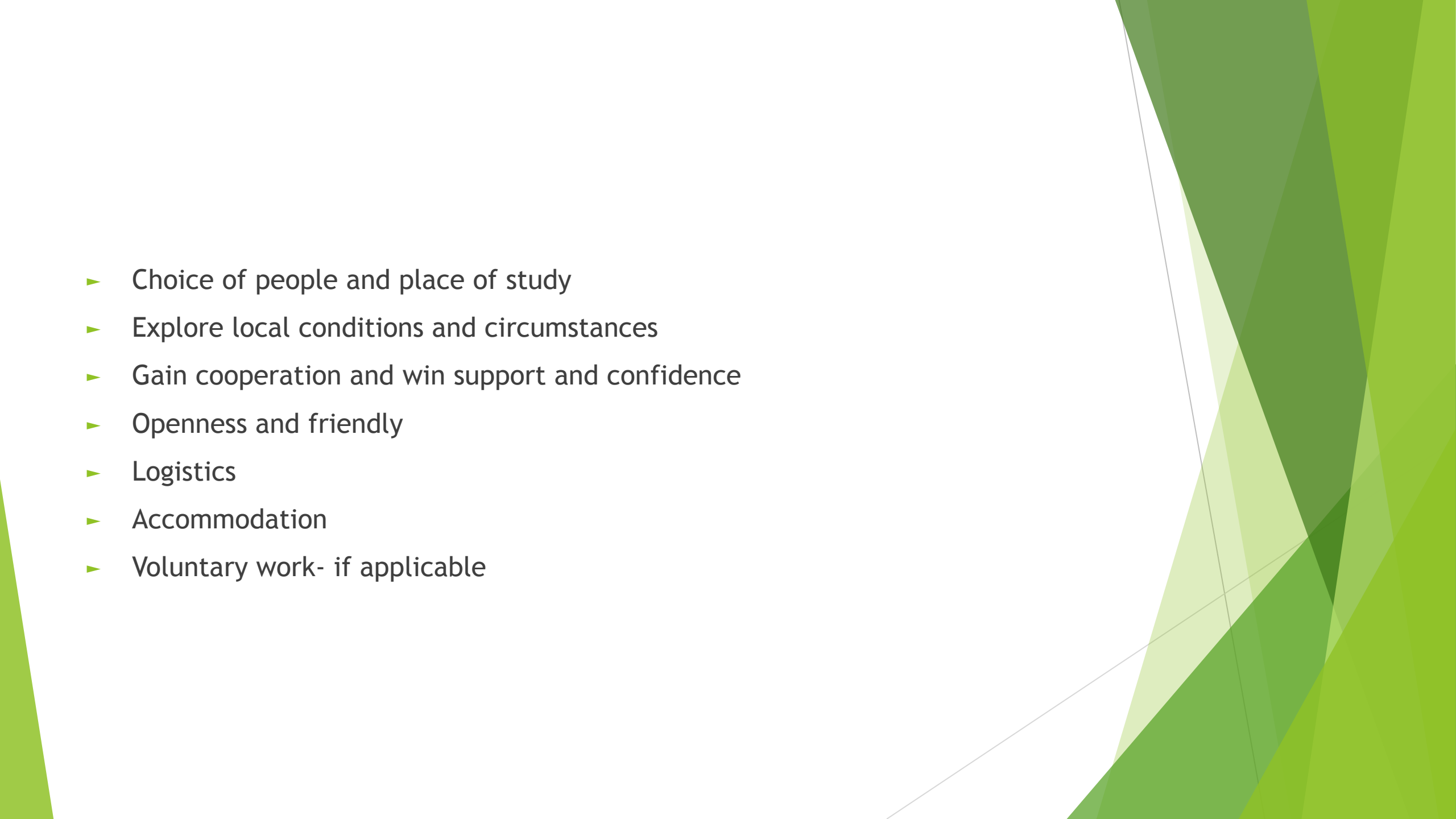
3. When

4. where

5. Why

## Method of field work

1. Entry into field
2. Formalities - permission from the community
3. Legitimize yourself
4. Present your reasons for conducting project work
5. Initial contact of researcher with social place
6. Rapport building
7. Language
8. Cross cultural ethics

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- The background of the slide features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, ranging from light lime to dark forest green. These shapes are concentrated on the right side and bottom of the slide, creating a modern, dynamic feel.
- ▶ Choice of people and place of study
  - ▶ Explore local conditions and circumstances
  - ▶ Gain cooperation and win support and confidence
  - ▶ Openness and friendly
  - ▶ Logistics
  - ▶ Accommodation
  - ▶ Voluntary work- if applicable

# Methods of exploratory/descriptive study

- More qualitative in nature
- Inductive- collection and analysis of data then conclusion
- No more previous research in exploratory study
- Detailed study

## Exploratory study

- An exploratory study is undertaken in areas where very little researches or studies are done
- The purpose of an exploratory study is to gain insight into phenomena or to discover new facts or knowledge



## Methods of exploratory study

- ▶ Research question formulation
- ▶ Tools - interview or questionnaire
- ▶ Descriptive analysis and writing
- ▶ Imagination and flexibility
- ▶ Not formal research design
- ▶ Apply informal approach

## Descriptive study

- ▶ Descriptive research describes phenomena as they exist

## Methods of descriptive study

- ▶ Systematic collection, analysis and presentation of data
- ▶ May be historical, survey or case studies

## Case study

- ▶ Detailed study of units. Units may be individual, organization, groups, events, or any events ...

## Methods of case study

- ▶ Judgemental/purposive sampling
- ▶ In-depth interview
- ▶ Qualitative analysis- thematic presentation

# Feasible study

- ▶ Study is feasible or not
- ▶ Focuses on following concerns
  1. Time constraint
  2. Financial consideration
  3. Anticipations and avoiding problems

# Other information

How to select topic ?

1. Your interests
2. Your knowledge
3. Suggested by teachers, friend and others
4. Your observations
5. Literature
6. Recommended topics
7. Feasibility

# How to define topic and problems?

1. Introduce your topic
2. Define your topic
3. Explain your topic
4. Selection of problems/issues according to your topic. For example drug addiction is the topic and causes, consequence, trend, user age group, user class etc. are problems or issues
5. Justification of problems or issues: to explore new facts or verify old facts
6. To limit problems, you can formulate research questions, for example, what are the causes of drug addiction?

# How to formulate objectives?

1. Objectives are possible or expected outcomes
2. Objectives focus; limits, guides your work
3. Suggested to formulate two or three objectives
4. Objectives should be clear, specific and measurable

# How to design methodology?

1. Decide your report that will be descriptive or analytic(qualitative or quantitative)
2. Define nature of data : qualitative data which comes in words, for example knowledge, experiences or thoughts of people. Quantitative data comes in number, for example, income, height, weight etc.
3. Determine types of data : which may be primary or secondary. Primary data comes from direct observation from field. For this, you have to select field sites from which you can collect data. Secondary data can be collected from secondary sources for example, books, journals, websites etc.
4. Develop data collection tools : which may be interview, questionnaire, observation, focus group discussion. You can use more than one tools if required
5. Selection of sample : you cannot take interview or can not fill up questionnaire to all population. Thus, you should take limited samples from population through sampling techniques



# How to prepare interview schedule and questionnaire?

1. Interview: you can prepare structured interview schedule with open questions. For example, in your opinion, what are the major causes of drug addiction?
2. Questionnaire : you can prepare questionnaire with including both open and closed questions. Questionnaire is a set of written questions. Those who want or can fill up questionnaire, you can provide them and collect after finished. Otherwise you ask questions and fill up in questionnaire

# How to collect and analyse secondary data?

- ▶ Secondary data refers to the information collected/analysed by others.
- ▶ You can collect secondary data from following ways:
  1. Books, journals, archives, newspaper, internet/goggle
  2. Articles
  3. Research reports/papers
  4. Unpublished documents
  5. Websites
- ▶ You can note necessary information then categorize, organize and write/analyse according to your objectives
- ▶ You can quote, paraphrase the information according to your requirements

# How to manage data?

1. Edit data : clear/unclear, complete/incomplete, sufficient/insufficient etc.
2. Categorize the data
3. Organize the data
4. Systematize data
5. Analyse or describe data

# How to write research report?

- Normally, you should follow following sample of format to write research report

1. Preliminary section(put Roman no. in page)

- 1.1 Cover page(title, name of submitters, purpose of submission, your institution's name and year of submission)

- 1.2 Abstract(executive summary, not more than one or two paragraph)

- 1.3 Recommendation letter(supervisor's letter, his name, signature and date)

- 1.4 Evaluation letter(department's letter including signature of department head, signature of supervisor, and signature of external supervisor)

- 1.5 Table of contents

- 1.6 List of tables(if you have)

- 1.7 abbreviations(if you have)

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## 2 Chapter one

### 2.1 Introduction

### 2.2 Objectives

### 2.3 Research methodology

### 2.4 Significance of research

## 3 Literature review

## 4 Analysis of data

## 5 Summary, conclusion and recommendation

Bibliography or references

Appendix(for example sample of questionnaire that you asked)

# How to write research paper?

I recommend as followings

1. Introduction(introduce of your topic, mention objectives and methodology)
2. Body of report(mention your facts justifying with literature)
3. Conclusion  
References

# How and when to submit report ? And How to be prepared for viva?

1. After completion your project work, you have to submit in the department in a deadline
2. For viva, you will be informed by the department
3. During viva, you have to brief the report. For this, prepare point wise brief notes, not more than one or two pages
4. Questions may be asked to you and you can defend the information as mentioned in report