

## SCALE OF RESEARCH

### MACRO, MESO, MICRO PROBLEM FORMULATION AND IDENTIFICATION-

Micro level – is the smallest unit of analysis. These pertain to studying specific target groups, the local attributes of a given region or a population in a particular context. Such analysis is significant in bringing out the ground realities wherein generalizations fail to explain the intricate patterns. Eg. Population distribution in a town or city, residential segregation of ethnic groups,

Meso level – is the intermediate unit of analysis. As these fall between micro and macro level, such analyses are specifically designed to reveal connections between the two, for example rainfall distribution in a given state and its effect on cropping pattern, etc.

Macro level – is the largest unit of analysis. This is undertaken to bring out the resultant outcomes over larger geographical region from a country to global levels. For example Research on climate change, impacts of globalization, nation-wide impact of policies etc, levels of development, environmental degradation etc.

## Characteristics of Geographical research

- The research begins with the question in the mind of the researcher.
- This question should be intelligently asked in the presence of the phenomena that the researcher has observed and which disturbs him.
- The question may involve unresolved and confusing situation around you.
- Research requires a plan: It is not aimless, undirected activity.
- It requires a definite plan direction and design. To ensure a good plan there should be:
  - A clear statement of the problem
  - Development of hypothesis. (A hypothesis is a logical supposition, a reasonable guess, an educated assumption which may give direction to thinking with respect to the problem and thus aid in solving it).
  - Data gathering and interpreting design
  - Test of hypothesis and an arrival at factually based conclusion.
- A research requires a clear statement of the problem.
- Here unanswered questions that the researcher finds indigenous to the research situation must be put clear at the very beginning of the research.
- Before we begin we need to understand the problem. We look at it objectively.

## Characteristics of Geographical research (contd)

- Any research deals with the main problem through sub problems.
- Most researchable problems have within them other problem areas of lesser breadth and importance  
Research seeks direction through appropriate hypothesis or research questions, having set the research problem and the sub problems.
- The sub problems are then viewed through logical constructs.
- Research deals with facts and meanings.
- Having isolated the problem, subdivided it into appropriate sub problems, and formulated hypothesis or research questions which will suggest the direction in which the facts may lie.
- The next step is to collect whatever facts which may seem to be pertinent to the problem.
- Then, organize them into meaningful aggregates capable of being interpreted
- Research is circular

## PILLARS OF SCIENTIFIC RESEARCH

### -Originality

Original work intends to discover new knowledge, addition of knowledge on existing knowledge, comparing of things and it is not duplicate.

### -Communality

Sharing of information with the public is expected after work. It can be done I publication, seminar, workshop or forum.

### -Universalism

If a research is done in one area it should bring the same results on other areas with similar characteristics

### -Constructive criticism

Be ready to receive constructive criticism.

## Steps in Scientific Geography Research

Problem identification: A problem is anything that requires some explanation. A problem must be clearly defined. A problem can cover anything, e.g. population growth and plan, population movement, Dynamics of human settlements, Urbanization process, economic growth, etc.

Gathering available information or data: You need to read widely what has been written about that particular problem. Relevant information that is available must be collected. This data is available in statistical publications, books, journals, News media, census reports, Historical documents, research documents, etc

Primary data or original data collection: Secondary data may not suffice the problem. The research has to collect original data. This is the data one collects from the field. A research advantageously collects from the field data that is relevant to the problem using different data collection techniques.

Classification or summarization of data: Data or facts that are collected must be organized or grouped to suit the study. The process is known as data classification. Items with similar characteristics are arranged in classes. Summarization is done so as to reduce bulkiness. Summarisation is done through techniques that give use of numerical descriptive values which come up with measures of central tendency, Deviation

Data analysis: Data is analysed so as to come up with explanations and conclusions. You derive meanings from the data through analysis and interpretation

Data presentation: The summarised data is presented using tables, values graphs, charts, diagrams, maps. Qualitative and quantitative measures help to understand the relationship between values.

Formulation of research methodology can be undertaken with the help of answering a series of questions, the most basic of which include the following: (2010, Gomez and Jones) –

What theme should I select to analyze?

What research questions could be appropriate for explaining or understanding the theme?

How should I collect data for answering those questions?

What procedures should be used to analyze that data?

What safeguards should I rely upon to ensure the validity and reliability of my account?

What is the purpose of the research (e.g., the production of scientific knowledge, saving the Earth, transforming society, or something else)?

What ethical safeguards have been followed or need to be addressed?

And.....



# RESEARCH QUESTION

## What is a guiding question?

A guiding question:

- consists of a topic or issue to be explored.
- is expressed as a question and provides focus to the investigation.

## What makes a GOOD guiding question?

Not all questions are guiding questions. There are a number of considerations that must be taken into account in order to ask a good guiding question:

- **It is open-ended, yet gives direction and focuses inquiry on a specific topic.**
  - For example, “Where is the most suitable location to set up an alfresco café in the school?” is a good guiding question to explore the school’s physical environment. The query specifies that knowledge about school’s physical environment (in this case, the atmosphere) is sought to address the focus of the inquiry, that is, to find the most suitable location for an alfresco café in the school. At the same time, it invites a wide-ranging and inclusive discussion by allowing that a suitability of a location for an Alfresco café may be different to different people.
- **It is non-judgemental and does not suggest or lead to a specific “right” answer.**
  - This means that the questions do not dictate or even suggest one or more right (or wrong), or better (or worse) answers. The question may be addressed in multiple ways. Moreover, these questions encourage thinking, because to answer them, the learner must ask other questions. For example, in order to answer the question on “Where is the most suitable location to set up an alfresco café in the school?”, students will have to ask other questions such as “What are the desired characteristics of an alfresco café?” (which will determine the data to be collected). So, it should not ask “Why is location X more suitable for the Alfresco café?”

## RESEARCH QUESTION

[https://www.youtube.com/watch?v=sLDxDVN  
QMxc](https://www.youtube.com/watch?v=sLDxDVNQMxc)



## DEVELOPING A RESEARCH QUESTION

[https://www.asu.edu/lib/tutorials/storyline/developing-research-question/story\\_html5.html](https://www.asu.edu/lib/tutorials/storyline/developing-research-question/story_html5.html)

# From Topic to Question

## Narrow Your Research Topic Using Sources

Read library and online sources about your topic to help you develop a focused research question (or thesis).

### Sources

#### Background Info

Wikipedia  
Books

#### Topic

Ex. Climate Change



#### Secondary Sources

Scholarly Articles

#### Broad Question

Ex. What is the effect of climate change on the environment?



#### Secondary Sources

Scholarly Articles

#### More Specific Question

Ex. How is climate change affecting the glaciers?



#### Primary Sources

Research Articles  
Newspapers  
Data + Statistics

#### Research Question

Ex. How is glacial melting affecting the wildlife in Alaska?



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#### Tip

How specific you get depends on the assignment and how much time you have to complete it.

Your question needs to be narrow enough to work on in the time allotted and broad enough to find sources. If your question requires data collection or obscure primary sources, it may not be feasible for a semester-length paper.

From Topic to Question: Narrow Your Research Topic Using Sources

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On the basis of the need to conduct more research to understand disciplinary data practices, this research is underpinned by the following **research question**:

In what ways are the data practices of researchers in geography shaped by the nature of the discipline?

The aim of the research is to investigate the relationship between data practices of researchers and the culture of a discipline, focusing on the discipline of geography. A possible outcome of developing this detailed understanding of the mutually shaping relationship between data and disciplinary cultures would be informed national and institutional research policy development based on cultural sensitivity.

In order to answer the above question, the following **sub-questions** were developed:

1. What are the characteristics of geography as a discipline (i.e. intellectual, social and organisational aspects)?
2. What are the data practices (i.e. collecting, managing, using and especially sharing data) of researchers in geography and are there identifiable patterns within or across subdisciplines?
3. Do patterns of data practices, especially data sharing, vary across different sub-disciplines geography and, if so, why?