Introduction to Fieldwork

Fieldwork is an approach through which geographical knowledge and skills can be acquired practically in the field. The field is the major source of primary geographical information (data). Therefore fieldwork involves observation, interpreting what is observed and recording the relationship on the human and physical environment.

Fieldwork - in Geography is conceived as field of study, concerned with the physical and human landscape in both urban and rural settings and whose teaching must be based on three-fold study approach namely:

-Observation

-Recording and interpretation

-Making if generalisations based on this approach

Fieldwork involves a number of activities, it involves both technical and Organisational decisions. The pre-field work preparation in the organisation of fieldwork is very important the success and failure will largely depend on how well pre-field preparations were made.

Technical Decisions
-Identify the topic to work on
-Set objectives of the study
-Identify area where to carry out fieldwork
-A pilot study of the fieldwork area
-Determine methods to use in carrying out fieldwork
-The equipment to use
-Permission to carry out fieldwork

Organisational Decisions
-Route plan
-Estimation of time
-What activities to carry out, where and how
-How much time to spend on each activity
-Mark particular areas of interest
-Instructions to give to students
-Essential equipment
-Data to carry out fieldwork.

Significance of field work in Geographical studies:

1. It is of great pedagogical importance as it lets students experience the geography of a particular region which theoretical texts can't do.

2. Field surveys enhance our understanding about patterns and spatial distributions, their associations and relationships at the local level.
3. Field surveys facilitate the collection of local level information that is not available through secondary sources.
4. It is very important as it helps to gather required information so as the problems under investigation is studied in depth as per the predefined objectives.
5. Field studies enable the investigator to comprehend the situation and processes in totality and at the place of their occurrence.
6. All the geographical skills are used in practical during field work. You get to learn and apply the skills of sampling, data collection, data processing, making questionnaires, map making, statistical techniques to derive results, observational skills and skills of interviewing etc.
7. It helps you understand the theoretical concepts better.
8. It gives you a chance to enjoy a wide variety of environments and landscapes.
9. Develops an understanding and sensitivity about the culture and people of field area. This may change your biased views about that community.
10. And most importantly, it is enjoyable and gives you a great memorable experience.

DATA

Data is a collection of facts, values or measurements from the real world or in other words data is information that is translated into a form that is more convenient to process. Datum is a singular form i.e. single measurement. Example data related to growth and distribution of population, production and distribution of various crops, minerals and industrial products in tabular form.

Nature of data:

Data can be in numbers, words, measurements, observations or even just description of things i.e. data can be quantitative or qualitative in nature.

(i)   *Qualitative data*: is descriptive information which describes something i.e. data is observed like colour, texture, smell, taste, appearance, beauty etc. However data originally obtained as qualitative information about individual items may give rise to qualitative data if they are summarized by means of counts.

(ii)   *Quantitative data*: is numerical information (in numbers) measured or identified on numerical scale and can be analyzed using statistical methods and results can be displayed using tables, charts, histograms and graphs. Quantitative data is measured may be in length, height, area, volume, weight, speed, time, temperature, humidity, sound levels, cost, ages etc. Quantitative data may be discrete or continuous in nature.

--- discrete data: can only take certain values (like whole numbers)

--- continuous data: can take any value (within a range e.g. 3.265….)

Data collection must be exercised carefully because data constitute the foundation on which the superstructure of statistical analysis is built. The results obtained from the analysis are properly interpreted and policy decisions are taken. Hence if the data are inaccurate and inadequate the whole analysis may be faulty and the decisions taken misleading.

Depending on the source geographical data are classified under 2 categories

(A) Primary data

(B) Secondary data

(A) Primary data: The data collected for the first time generated through large number of surveys by an individual or the group of individuals, surveys conducted by government, institutions and research bodies, through direct observations in the field etc. For example data obtained in a population census by the office of Registrar general and Census Commissioner, Ministry of Home Affairs are primary data. Such data are original in character.

(B) Secondary data: Data which are not originally collected but rather obtained from published or unpublished sources are known as secondary data. For example, for the office of the registrar General and Census Commissioner the census data are primary where as for all others, who use such data, they are secondary. Thus the data are primary for the individuals, agency or institution collecting them where as for the rest of the world they are secondary.

Sources of Primary data:

i.   Personal observations: it refers to the collection of information by an individual or group of individuals through direct observations in the field. Through a field survey, information about the relief features, drainage patterns, types of soil and natural vegetation, as well as population structure, sex ratio, literacy, means of transport and communication, urban and rural settlements, etc. is collected. However, in carrying out personal observations, the person(s) involved must have

theoretical knowledge of the subject and scientific attitude for unbiased evaluation.

ii. <u>Interview</u>: In this method, the researcher gets direct information from the respondent through dialogues and conversations. However, the interviewer must take the following precautions while conducting an interview with people of the area:

✓ A precise list of items about which information is to be gathered from the persons interviewed be prepared.

✓ The person involved in conducting the interview should be clear about the objective of the survey

✓ The respondents should be taken into confidence before asking any sensitive question and he/she be assured that the secrecy will be maintained.

✓ A friendly atmosphere should be created so that the respondent may explain the facts without any hesitation.

✓ The language of the questions should be simple and polite so that the respondents feel motivated and readily agree to give information asked for.

✓ Avoid asking any such question that may hurt the self – respect or the religious feelings of the respondent.

✓ At the end of interview, ask the respondent what additional information he/she may provide, other than what has already been provided by him/her.

✓ Pay your thanks and gratefulness for sparing his/her valuable time for you.

Indirect oral interview and information from the correspondents

iii. <u>Questionnaire/Schedule</u>: In this method, simple questions and their possible answers are written on a plain paper and the respondents have to tick-mark the possible answers from the given choices. At times, a set of structured questions are written and sufficient space is provided in the questionnaire where the respondent write their opinion. The objectives of the survey should be clearly mentioned in the questionnaire. This method is useful in carrying out the survey of a larger area. Even questionnaire can be mailed to distant places. The limitation of the method is that only the literate and educated people can be approached to provide the required information. Similar to the questionnaire that

contains the questions pertaining to the matter of investigation is the **schedule.** The only difference between the questionnaire and the schedule is that the respondent himself/herself fills up the questionnaires, whereas a properly trained enumerator himself fills up schedules by asking question addressed to the respondents. The main advantage of schedule over the questionnaire is that the information from both literate and illiterate respondents can be collected.

iv. Other Methods: The data about the properties of soil and water are collected directly in the field by measuring their characteristics using soil kit and water quality kit. Similarly, field scientist collect data about the health of the crops and vegetation through various instruments etc.

Sources of secondary data: Secondary sources of data consist of published and unpublished records which include government publications, documents and reports.

i. **Published Sources:**

✓ Government Publication: The publications of the various ministries and the departments of the Government of India, state governments and the District Bulletins are one of the most important sources of secondary information. These include the Census of India published by the Office of the Registrar General of India, reports of the National Sample Survey, Weather Reports of Indian Meteorological Department, and Statistical Abstracts published by state governments, and the periodical reports published by different Commissions etc.

✓ Semi/Quasi-Government Publications: the publications and reports of Urban Development Authorities and Municipal Corporations of various cities and towns, Zila Parishads (District Councils), etc. fall under this category.

✓ International Publications: The international publications comprise yearbooks, reports and monographs published by different agencies of the United Nations such as United Nations Educational, Scientific and Cultural Organisation (UNESCO), United Nations Development Programme (UNDP), World Health Organisation (WHO), Food and Agricultural Organisation (FAO), etc. Some of the important publications of the United Nations that are periodically published are Demographic Year Book, Statistical Year Book and the Human Development Report.

- ✓ Private Publications: The yearbooks, surveys, research reports and monographs published by newspapers and private organisations fall under this category.

- ✓ Newspapers and Magazines: The daily newspapers and the weekly, fortnightly and monthly magazines serve as easily accessible source of secondary data.

- ✓ Electronic Media: The electronic media specially internet has emerged as a major source of secondary data in recent times.

ii. **Unpublished Sources:** all statistical material is not always published. There are various sources of unpublished data such as records maintained by various government and private offices, studies made by research institutions, scholars etc. Such sources can be used where necessary.

Sampling

Sampling is a method of studying from a few selected items,instead of the entire big number of units. The small selection is called **sample**. The large number of items of units of particular characteristic is called population.

In other words "Sampling refers to the statistical process of selecting and studying the characteristics of a relatively small number of items from a relatively large population of such items, to draw statistically valid inferences about the characteristics about the entire population".

(A population can be defined as including all people or items with the characteristic one wishes to understand.Because there is very rarely enough time or money to gather information from everyone or everything in a population, the goal becomes finding a representative sample (or subset) of that population).

Example: We check a sample of rice to see whether the rice well boiled or not. We check a small sample of solution to decide how much a given solution is concentrated. Thus with the sample we infer about a population.

The process of sampling involves three elements

i. Selecting the sample

ii. Collecting the information

iii. Making an inference about the population

Need of sample:

i. Get information about large populations

ii.   Lower cost

iii.   More accuracy of results

iv.   High speed of data collection

v.   Availability of population elements

vi.   Less field time

vii.   When it is impossible to study the whole population

Essentials of sampling:

i.   Representativenes – sample should represent the universe

ii.   Adequacy/appropriately sized: sample should not be too small in number

iii.   Independence/unbiased: sample should be selected independently of one another

iv.   Homogeneity: sample should be homogeneous

v.   Randomness: all items of the universe should have equal chance of selection

Types of sampling: can be grouped into two broad heads

I.   *Probability sampling (random sampling)* – in which every item in the universe/population has a known chance or probability of being chosen for the sample. Thus selection is independent of the persons making the study.

II. *Non-probability sampling (non-random sampling)* – methods are those which do not provide every item in the universe/population with a known chance of being included in the sample, means partially subjective.

I.   Probability sampling (random sampling) –

1. *Simple or Unrestricted Random Sampling*: refers to the sampling technique in which each and every unit of the population has an equal opportunity of being selected in the sample, which means selection of a sample is just a matter of chance. To ensure randomness of selection one may adopt following methods:

    • lottery method – under this method all items of the universe/population are numbered or named on separate slips of paper of identical shape and size. These slips are then folded and mixed up in container. A blindfolded selection is made for desired number

of samples. Thus selection of sample depends entirely on chance. This method is popular in lottery draws where a decision about prizes is to be made.

- Table of random numbers – lottery method become unmanageable as the size of population increases, so here the random selection is made using table of random numbers. "A **random number table** is a **table** of digits. The digit given in each position in the **table** was originally chosen **randomly** from the digits 1,2,3,4,5,6,7,8,9,0 by a **random** process in which each digit is equally likely to be chosen." Random number tables have been in existence since 1927 and are generated by a variety of methods. Examples- Tippet's random number table, Kendall and Babington Smith table.

Merits/advantages:

- As the selection depends on chance so no possibility of personal bias.
- As the size of sample increases, it becomes increasingly representative of population.
- Accuracy can be assessed because sampling errors follow the principle of chance.

Limitations/disadvantages:

- It needs catalauged universe to draw sample but it becomes difficult for investigator to have up to date lists of all the items of the population to be smapled.
- The size of the sample required to insure statistical reliability is usually larger to under random sampling.

2. *Stratified Sampling (Restricted Random Sampling)-* Stratified random sampling or stratified sampling is one of the random methods which by using the available information about the population, attempts to design a more efficient sample than by the sample random procedure.

  The procedure of random sampling is as follows:

  a. The universe is subdivided or stratified into groups which are mutually exclusive and include all the items in the universe.
  b. A simple random sample is the chosen independently from each group.

How to Select Stratified Random Sample?

  i. Base of Stratification- In the stratification procedure a heterogeneous sample is divided into different groups in such a way that

a. There is as great a homogeneity as possible within each group.

b. A marked difference is possible between the groups.

For example to study about Delhi, whole city may be divided into various parts such as zones or wards, and from each part a sample may be taken as random.

ii. Number of Strata- The practical considerations limit the number of strata that is feasible. As a generalization more than six strata may be undesirable.

Merits/Advantages:

- More representative- Since the population is first divided into various strata and then a sample is drawn from each strata, there is less possibility of any essential group of population being completely excluded. Thus a more representative sample is secured.

- Stratified sampling ensures greater accuracy.

Demerits/Disadvantages:

- Utmost care must be exercised in dividing population into various strata. If proper stratification of population is not done, the sample may have the effect of bias.

- The item from each stratum must be selected at random, which can be rather difficult in the absence of skilled sampling supervisors.

- Because of likelihood that a stratified sample will be widely distributed geographically, the cost per observation may be high.

3. *Systematic Sampling (Restricted Random Sampling)-* A systematic sample is formed by selecting one unit at random and then selecting additional units at evenly spaced intervals until the sample is formed. This method is popularly used in those cases where a complete list of population from which sample is to be drawn is available. The list may be prepared in alphabetical, geographical, numerical or some other order.

Merits/Advantages:

- The systematic sampling design is simple and convenient to adopt.

- The time and work involved in sampling by this method are relatively less.

- If populations are scientifically large, systematic sampling can often expected to give results similar to those obtained by proportional stratified sampling.

Demerits/disadvantages:
- The main limitation of this method is that it becomes less representative if we are dealing with populations having "hidden periodicities".
- If the population is ordered in a systematic way with respect to the characteristics the investigator is interested in, then it is possible that only certain types of items will be included in the population. For example, in a study of worker's wages the list may be such that every tenth worker in the list gets wage above 750 per month.

4. *Multistage Sampling or cluster Sampling-* Under this method the random selection is made of primary, intermediate and final units from a given population or stratum. There are several stages in which the sampling process is carried out. At first, the first stage units are sampled by some suitable method, then a sample of second stage units is selected from each one of the first stage selected units by some suitable methods which may be same or different from the method employed in first stage units. Further stages may be added as required.

Merits/Advantages:
- It introduces flexibility in the sampling method which is lacking in the other methods.
- It enables existing divisions and subdivisions of the population to be used as units as various stages, and permits the field work to be concentrated and yet larger area to be covered.

Demerits/Disadvantages:
- A multistage sample is in general less accurate than a sample containing the same number of final stage units which have been selected by some single stage process.

II. **Non-Probability sampling methods:** (Judgement sampling, Quota Sampling, purposive, Convenience sampling, Snowball Sampling)

1. *Judgement sampling:* the choice of sample items depends exclusively on the judgement of the investigator for which he thinks is most typical of the universe/population.

Example: if the sample of the ten students is to be selected from a class of sixty for analysing spending habits, the investigator would select 10 students who in his opinion, are representative of the class.

Merits/advantages:

- When only a small number of sampling units are in the universe, simple random selection may miss the more important elements whereas judgement selection would certainly include them in sample.

- In solving everyday business problems and making public policy decisions this is the time saving practical method to arrive at solutions to the urgent problems.

Limitations/disadvantages

- This method is not scientific because selected units may be affected by personal bias of the investigator

- There is no objective way of evaluating the reliability of sample results. The accuracy depends on excellence in judgement

2. *Quota Sampling*: In quota sample, quotas are set up according to some specified characteristics such as- so many in income groups, age, political or religious affiliations etc. after setting quota certain number of persons are interviewed in each quota with specified characteristics. Within the quota the selection of sample items depends on personal judgement. Quota sampling is often used in public opinion studies.

   Example: in a radio listening survey the interviewers may be told to interview 500 people living in a certain area and that out of every 100 persons interviewed 60 are to be housewives, 25 farmers and 15 children under the age of 15.

3. *Convenience sampling:* It is obtained by selecting convenient population units. Itis a method of choosing subjects who are available or easy to find. This method is also sometimes referred to as haphazard, accidental, or availability sampling. The primary

advantage of the method is that it is very easy to carry out, relative to other methods. A researcher can merely stand out on his/her favourite street corner and hand out surveys. This method is often used for making pilot study.

Example: One place this used to show up often is in university courses. Years ago, researchers often would conduct surveys of students in their large lecture courses. For example, all students taking introductory sociology courses would have been given a survey and compelled to fill it out.

Merits/advantages:

- it is easy to do,
- particularly with a captive audience, and in some schools you can attain a large number of interviews through this method.

Demerits/disadvantages:

- results are hardly representative of population
- results obtained are biased and unsatisfactory

4. ***Purposive Sampling:*** Purposive sampling is a sampling method in which elements are chosen based on purpose of the study. Purposive sampling may involve studying the entire population of some limited group (sociology faculty at University) or a subset of a population (university faculty who have won Nobel Prizes). As with other non-probability sampling methods, purposive sampling does not produce a sample that is representative of a larger population, but it can be exactly what is needed in some cases - study of organization, community, or some other clearly defined and relatively limited group.

A subset of a purposive sample is a **snowball sample** -- so named because one picks up the sample along the way, analogous to a snowball accumulating snow. A snowball sample is achieved by asking a participant to suggest someone else who might be willing or appropriate for the study. Snowball samples are particularly useful in hard-to-track populations, such as truants, drug users, etc.

5. ***Snowball Sampling:***

Snowball sampling is a method in which a researcher identifies one member of some population of interest, speaks to him/her, then asks that person to identify others in the population that the researcher might speak to. This person is then asked to refer the researcher to yet another person, and so on.

Snowball sampling is very good for cases where members of a special population are difficult to locate. For example, several studies of Mexican migrants in Los Angeles have used snowball sampling to get respondents.

The method also has an interesting application to group membership - if you want to look at pattern of recruitment to a community organization over time, you might begin by interviewing fairly recent recruits, asking them who introduced them to the group. Then interview the people named, asking them who recruited them to the group.

Preparation of Questionnaire

A questionnaire is a technique for collecting data in which a respondent provides answers to a series of questions. To develop a questionnaire that will collect the data you want takes effort and time. However, by taking a step-by-step approach to questionnaire development, you can come up with an effective means to collect data that will answer your objective of conducting field survey.

Steps in Making a Questionnaire

1) **Questionnaire Designing**
2) **Questionnaire Writing**
3) **Questionnaire Distribution**

Questionnaire Designing

- **Identify a theme.** With a theme, you can specify what data needs to be gathered and how these may be acquired in the form of a question.
- **Ask simple questions.** Be as specific as possible. Your respondents need to be able to answer each question without much deliberation.
- **Ask the same question in different ways.** There's always a chance that your respondent may be answering the questionnaire absentmindedly. To assess the reliability of such response, ask the same question several times but in different ways.

- **Develop questions for your questionnaire.** The questions that you develop for your questionnaire should be clear, concise, and direct. This will ensure that you get the best possible answers from your respondents.

- **Restrict the length of your questionnaire.** Keep your questionnaire as short as possible. More people will be likely to answer a shorter questionnaire, so make sure you keep it as concise as possible while still collecting the necessary information.

- **Ensure you can protect privacy**. Make your plan to protect respondents' privacy before you begin writing your survey. This is a very important part of many research projects.

Questionnaire Writing

- **Introduce yourself** Your introduction should explain who you are, and what your credentials are. You should clarify if you are working alone or as a part of a team. Include the name of the academic institution or company for whom you are collecting data.

- **Explain the purpose of the questionnaire.** Many people will not answer a questionnaire without understanding what the goal of the questionnaire is. No long explanation is needed; instead, a few concise sentences will do the trick.

- **Reveal what will happen with the data you collect.** Are you collecting these data for a class project, or for a publication? Are these data to be used for market research? Depending on what you intend to do with the data you collect from your questionnaire, there may be different requirements.

- **Estimate how long the questionnaire will take.** Before someone sits down to take your questionnaire, it may be helpful for them to know whether the questionnaire will take them 10 minutes or 2 hours.

- **Make sure your questionnaire looks professional.** Because you want people to have confidence in you as a data collector, your questionnaire must have a professional look.

- **Thank your respondents**. Thank them for taking the time and effort to complete your survey.

Questionnaire Distribution

- **Do a pilot study**. Ask some people you know to take your questionnaire (they will not be included in any results stemming from this questionnaire), and be prepared to revise it if necessary. Plan to include 5-10 people in the pilot testing of your questionnaire. Get their feedback on your questionnaire for any changes.

- **Choose a delivery method.** If you want to reach a wider audience, you can distribute your questionnaires through various social networks.