

Unit 2

Describing Data

For
BCA Sixth Semester
Pokhara University

Course of Study

- **Unit 2: Data Collection**

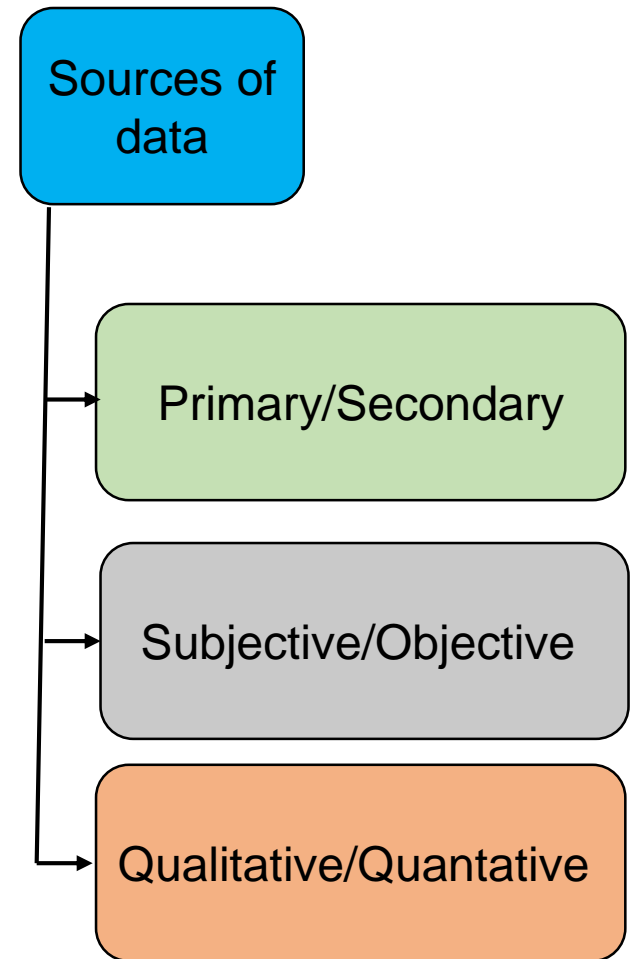
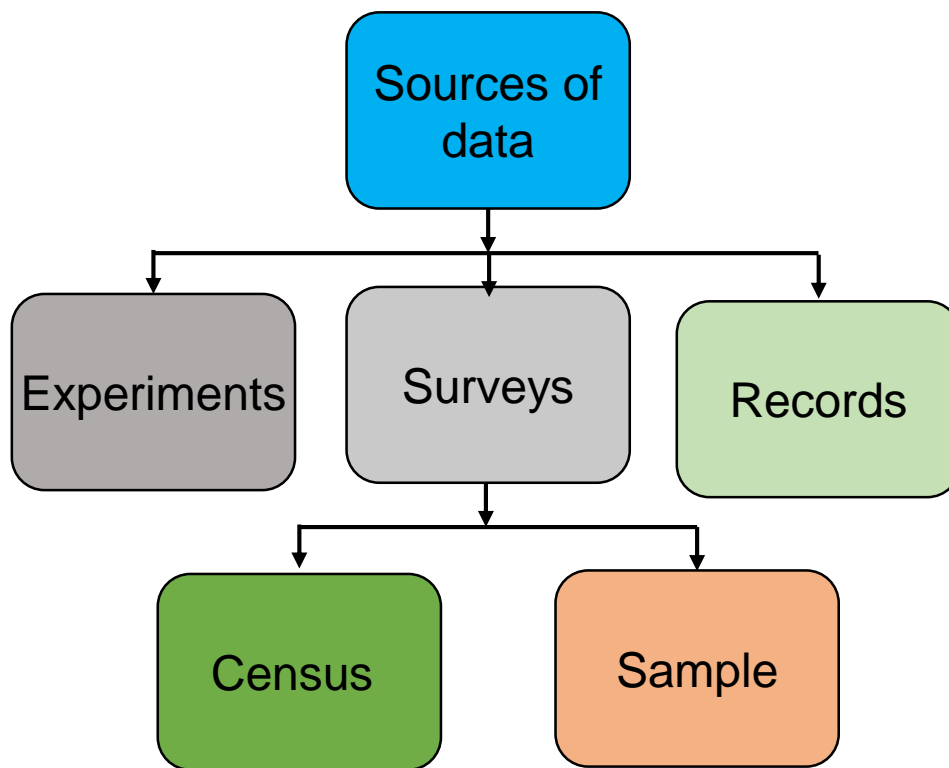
4 hrs

- Sources of data:-

- Experimental research
- Survey research
- Questionnaire

- Data preparation:-

- Editing
- coding
- and transcribing.



- Note: Subjective data is collected through personnel communication, while objective data is collected via Observations.

All the data can be collected through		
1	Experiment	performed in fields, botanical gardens, laboratories, clinical pathology, hospital.
2	Surveys	Field studies, incidence or prevalence of diseases. (eradication of malaria)
3	Questionnaire	Prepare set of questionnaire (open ended/semi-open ended/closed) and collected and recorded.
4	Records	Maintained in register, birth, deaths, census, marriage, divorce etc.

Primary Source of Data

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graph LR; A[Primary Source of Data] --> B[Questionnaire]; A --> C[Interview]; A --> D[Observation]; B --> E[Open ended]; B --> F[Closed ended]; C --> G[Structured]; C --> H[Unstructured]; C --> I[Telephone]; D --> J[Scheduled]; D --> K[Unscheduled];
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Questionnaire

Open ended

Closed ended

Interview

Structured

Unstructured

Telephone

Observation

Scheduled

Unscheduled

Methods of Collecting Primary Data



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graph TD; A[Methods of Collecting Primary Data] --> B[Direct Personal Interviews]; A --> C[Indirect Oral Interviews]; A --> D[Information from Local Correspondents]; A --> E[Questionnaire sent by Mail/e-mail]; A --> F[Telephone Survey];
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Direct Personal Interviews

Indirect Oral Interviews

Information from Local Correspondents

Questionnaire sent by Mail/e-mail

Telephone Survey

Direct Personal Interviews

1. *Direct Personal Interviews:*

- Investigators himself goes to the field and makes direct personal contacts with the respondents from whom the data are to be collected.
- Investigator asks the various questions and collect first hand data from them.

Merits

- The data are original and accurate.
- Suitable for the small research field.
- Most of the research respondent will not hesitate to respond to the question because they face with the researcher himself in the field so sensitive question can also be asked.
- As the collection of data is conducted by a single person so the data are very likely to be homogeneous character.

Contd...

- The investigator can make some changes in the questions if he/she considers it necessary to get correct information.
- The investigator can also get some additional information which may be useful in analysing the data.
- The examiner can cross examine the informants and check whether they are giving correct answers.

Demerits

- Takes a lot of time and costly too.
- Not suitable for the wide range of research field.
- There is no one else to control the whims and prejudices of the interviewer
- There is great chance of collecting biased data.

Indirect Oral Interview

- the investigator does not make any contact with his research respondent.
- required data are collected by interviewing the third persons who are in touch in the field of inquiry.
- some enumerators are appointed and they are given a short list of questions.
- meet with the research respondent and put the question in front of them and get required information.
- may be used when it is not possible to meet the research respondent directly.

Contd...

➤ Merits

- Cheaper and consumed less time than direct personal interview.
- Can cover much wider area of field of inquiry.
- Expert opinions can also be obtained.
- The enumerators can tactfully utilize their personal meetings with the informants to elicit proper information from them.
- The personnel bias of the investigator can have no effect on the data collected.

➤ Demerits

- Investigator does not get chance to meet informants directly and the informants are also other than the concerned persons.
- The whims and prejudices of the enumerators may also have an adverse effects on the data.
- As the informants have no gain and loss from the enquiry, they may not be interested in giving clear and detailed information.

Information from local Correspondence

- data are not collected by the investigator.
- agents known as correspondents are employed in various places.
- They collected information in their own ways and sent them in the central office where the data are processed and analyzed.
- used by news papers to get information about the important event in politics, sports, accidents, strikes etc.

➤ Merits

- This method is very useful when the area of enquiry is very wide and scatter.
- Saves time, money and manpower.
- easily information collected and is free from the difficulties and troubles associated with the other methods.

Contd...

➤ Demerits

- The information are generally based on observation and estimates and they cannot have a high degree of accuracy.
- As the information are collected in their own style, the opinions and the expectations of the correspondents are bound to influence their findings and they are not always reliable.
- It is usually difficult to check or verify the accuracy of the data.

➤ Precautions to be taken

- Experienced and efficient correspondent should be appointed.
- They should be free from prejudices as far as possible.
- The data should be used only in those cases where rough and approximate estimates are required.

Questionnaire sent by mail/e-mail

- a questionnaire relating to the enquiry is prepared.
- It contains a lot of questions and some space for the answers to be filled in by the respondents.
- Copies of questionnaires are sent by post to various persons at different places.
- are requested to answer all the questions and return it by post within a specified time
- is suitable when the area of enquiry is vast and spread far and wide
- the informants are literate and they know the importance of such enquiries.

➤ Merits

- Economical, cheapest and needs few number of manpower.
- From wide range of field of enquiry easily information can get.
- The information getting is free from bias prejudices as the questionnaire is filled by the informants themselves

Contd...

➤ Demerits

- Inapplicable when the informants are illiterate.
- It is very difficult to verify if wrong answers is given by the informants.
- Informants do like to answers with their personal affairs like monthly income and income sources, personnel habits, family affairs etc.
- This method is not flexible since the supplementary questions can not be asked in case of incomplete answers.
- Most of the informants are not in touch of the research respondents and no interest for the enquiry as a result they do not fill the subject of enquiry.

Telephone Interview

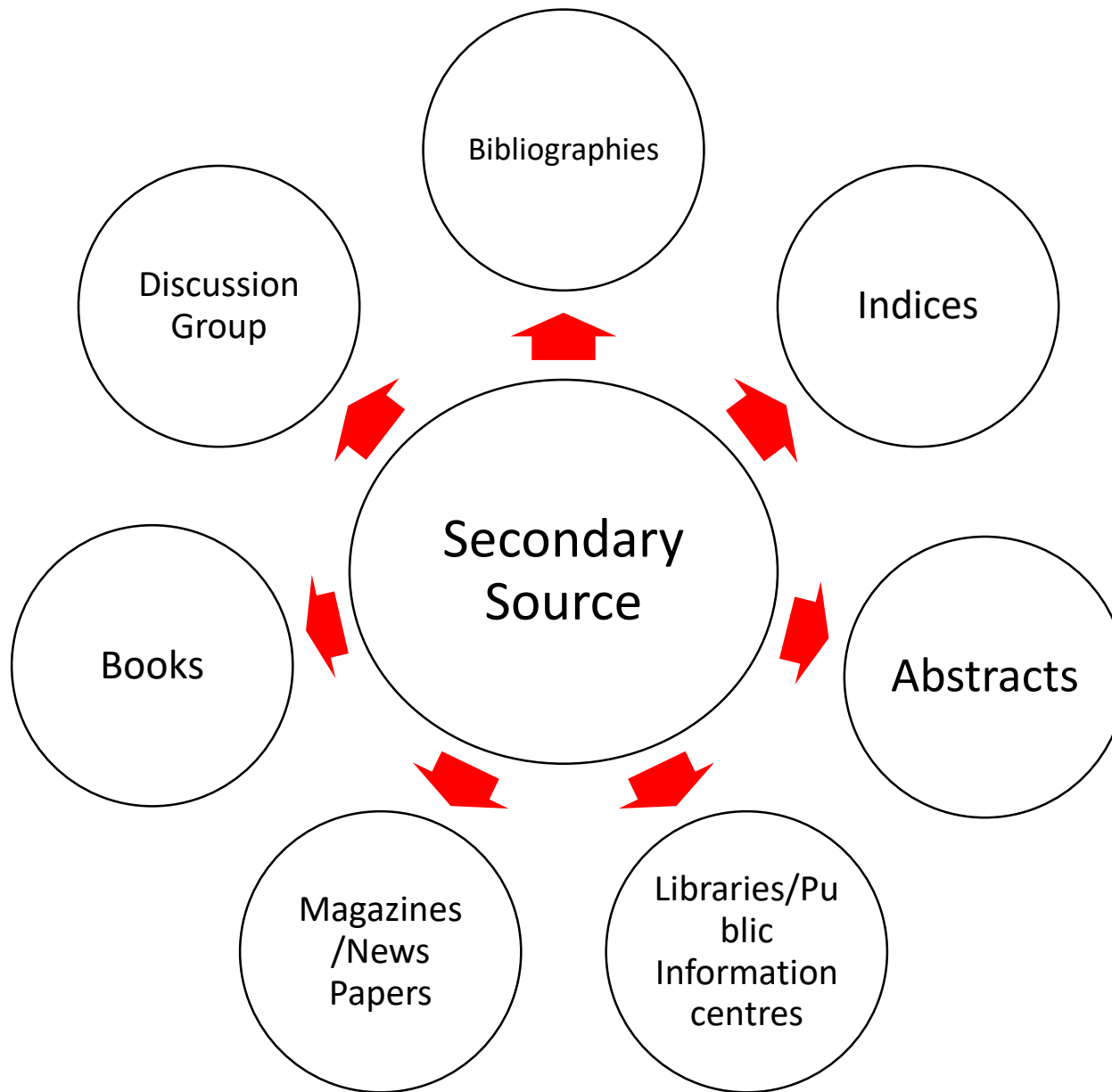
- research respondent by means of telephone and gets required information.
- less time consuming and more convenient than personnel interview.
- A list of sequential questionnaire is prepared

➤ Merits

- More reliable and more convenient.
- In short period of time more information getting.
- Original and accurate information collected.
- Sensitive questions can also be asked.
- Suitable for small scale data collection.

➤ Demerits

- Takes time and costly too.
- Not suitable for those who have not telephone.
- Collecting information is difficult since the dialogue either have to record or have to write. Both of them is tedious.



Classification (Types of data)

- According to *Connor*, “Classification is the process of arranging collected information (either actually or notionally) in groups and classes according to their resemblances and affinities and gives expression to the unity of attributes that may subsist among a diversity of individual”.
- In other words, classification is grouping of data on the basis of any common characteristics they may have.
 1. On quantitative basis
 2. On qualitative basis
 3. On time basis
 4. On geographical basis

- Example 3

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Sales	21.6	22.9	25.5	21.9	23.9	27.5	29	29.7	28.6	29.9

Example 4:

Countries	Area (Square km)
Bangladesh	1,43,998
Bhutan	46,500
India	32,87,590
Maldives	9,000
Nepal	1,47,181
Pakistan	7,69,099
Srilanka	65,610

Place	Patient Number
Kathmandu	3250
Lalitpur	465
Banke	3287
Delhi	90,000
Manang	0
Rasuwa	7
Jhapa	60

Data Preparation

- “Data analysis is a process of gathering modeling and transforming data with the goal of highlighting useful information, suggestions, conclusions and supporting decision making. Data analysis has multiple facts and approaches , encompassing diverse techniques under a variety of names, in different business, sciences and social science domain.”
- Thus, data analysis is the process of gathering, arranging, classifying, modeling and analyzing the data with the purpose of generating useful information.

Organizing and Preparing Data

- Data should be processed using specific techniques to draw the conclusion.
- Processing technique is used to make data valid, simple and reliable.

Procedure of data processing :

- **Editing**
- **Coding**
- **Classification**
- **Tabulation**
- **Summarizing**

Editing

- The process that detects errors in the raw data and rectifies the errors and simplifies to the act of coding is known as editing.
- The data obtained from interview ,observation and questionnaire should be edited.
- It ensures the quality of the data.
- Field editing means the editing made by surveyor in the field itself on the basis of his/her experience and observation.
- Data are edited before the analysis of such data in the office by the editor alone or jointly is known as central editing.
- The main objectives of editing are to ensure the following things:
 - Accuracy of data
 - Consistent with the intent of the question and other information in the survey.
 - Data is uniformly entered.
 - It is complete.
 - Arrange to simplify coding and tabulation.

Rules for editing data

- a. Be familiar with instruction given to interviewer and interviewees.
- b. Do not destroy and erase the original entry.
- c. Make all edited entries on an instrument in some distinctive color and in a standard form.
- d. Put initial to signalize in all changed or amended answers.
- e. Place initial signature and date of editing on each instrument completed.

Coding

- The act of assigning numbers or other symbols to the responses of respondents so that the responses can be grouped into a limited number of categories is known as coding.
 - Single code should be provided to similar information or data.
 - Researcher cannot develop his/her concepts until the data is systematized.
 - Nowadays, computer is used for coding of data.
- Following rules are to be followed while coding:
- a. Coding should avoid un-clarity and duality so that codes can be used consistently.
 - b. All the codes used are to be defined.
 - c. Coding system should be developed while developing data collection design.
 - d. Codes are to be recorded in code book that provides meaning and information about the codes.
 - e. Codes should be appropriate to the research problem and purpose.
 - f. It should be exhaustive.
 - g. It should be mutually exclusive.
 - h. It should be derived from one of the classification.

Classification

- Classification means separating items according to similar characteristics and grouping them into various classes.
- First of all, data should be collected as per the research objectives.
- Such data are not ready for comparison and analysis until and unless they are systematically arranged and even they cannot be understood.
- Thus, dividing the data into different classes is based on the characteristics.
- According to *Connor*, “Classification is the process of arranging collected information (either actually or notionally) in groups and classes according to their resemblances and affinities and gives expression to the unity of attributes that may subsist among a diversity of individual”.
- In other words, classification is grouping of data on the basis of any common characteristics they may have.
- Types
 1. Geographical Classification
 2. Chronological Classification
 3. Qualitative Classification
 4. Quantitative Classification

Tabulation

- Tabulation is the process of arranging data in a systematic manner into rows and columns.
- Rows are horizontal arrangement and columns are vertical arrangement.
- It is the final step in collection and compilation of data.

➤ Advantages of Tabulation

- a. Helps to make data easily understandable
- b. Facilitates comparison
- c. Saves time and energy
- d. Avoid repetition
- e. Can easily remember

Rules for Tabulation of Data

1. The table should suit the size of the paper with proper rows and columns.
2. Table should be clear ,correct and attractive so that it can be easily read and understood.
3. Table is to be drawn based on the objectives of the research.
4. The units of measurement under each headings or sub-headings must always be indicated such as weight in kg, length in inch ,etc.
5. The table should be precise and easy to understand.
6. Abbreviations should be avoided especially in titles and headings.

Summarizing of Data

- The presentation of data in precise form so as to make easier for describing, analyzing and interpreting the data is known as summarizing of data.
- Summary of data may be presented in the form of
 - Table
 - Chart
 - Histogram
 - Bar graph
 - Pie chart
 - Time plot
 - or in other forms.

• *Thank You*