Business Statistics Notes

Unit 1: Introduction

Introduction to Statistics, Data Collection

1. Definitions of statistics

(a) Plural definition:

In plural sense statistics is defined as facts as information expressed numerically.

An aggregate of facts, numerically expressed, affected by many factors, collected in a systematic manner with definite purpose, reasonable degree of accuracy are characteristics of statistics in plural sense.

"Statistics may be defined as the aggregate of facts affected to a marked extent by multiplicity of causes, numerically expressed, enumerated or estimated according to a reasonable standard of accuracy, collected in a systematic manner for a predetermined purpose and placed in relation to each other". - By prof. Horace Secrist.

(b) Singular definition:

In singular sense, statistics refers to the science of studying statistical methods.

"Statistics may be defined as the science of collection, presentation, analysis and interpretation of numerical data." - By Croxton and Cowden.

2. Data Collection

• Data:
Data can be defined as numerical facts or figures or information which are used for the purpose of statistical analysis.
• Data are the raw materials for the final statistical conclusions.
• Collection of data is the 1st step in statistical investigation.
• Investigators: a person who conducts statistical enquiry collects the data
• Respondents/informant: Persons from whom information are collected.
• Statistical units: The items on which measurement are taken.

- **Data Collection:**

  Data collection is the process of collecting the necessary informations from the units of investigation.

3. Types of Data

1. Primary Data
2. Secondary Data

4. Primary Data

The data collected for the first time by the investigator or researcher and used by them in the statistical analysis are called the primary data.

5. Methods of Collecting Primary Data

The methods commonly used for the collection of primary data are as follows:

1. Direct personal interview
2. Indirect oral interview
3. Information through correspondence
4. Mailed questionnaire method
5. Schedules to be filled by enumerations

1. Direct Personal Interview:

In this method investigators or researchers personally and asked the necessary questions and collect the information (data) from them. The data collected by using the method are more accurate and reliable.

- It is the expensive and time consuming method. This method is not applicable when area of inquiry is large.

2. Indirect Oral Interview:

- When the informants hesitates to give information directly then information are collected with the help of third person who is in close contact with respondents.

- Respondents may hesitate to provide the information directly on the sensitive topics like drug addiction habit, smoking and alcoholic habits, income, property, diseases such as AIDS, etc.
- This method is less expensive and take less time as compared with direct personal interview.
- It is applicable for wider area.

3. Information through correspondence:
- In this method the investigator appoints the correspondents for different parts of the field of the inquiry. They collect information and send to the investigator/central office.
- This method is more suitable in the news media.
- It is applicable for wider area.

4. Mailed Questionnaire Method:-
- A set of questions is called questionnaire. The questionnaire are sent to the respondent in their address by the post. The respondents are requested to answer the question and return to the investigator by the post within the specific time.
- The manufacture companies use this method for the promotion of their goods
- This method saves time, money and requires less man power. But this is not applicable when the respondents are not educated.

5. Schedules to be filled by Enumerations:
- Schedule consist of a set of questions which are filled up by enumerators.
- Population census, Agricultural census, follow this method in Nepalese context.

6. Problems in Collecting Primary Data
- lack of money and time
- lack of transportation facilities

- There is high degree of non-response error from illiterate respondents
- lack of expertise and trained manpower for preparing questionnaire and collecting the primary data.
- There is chance of getting unreliable in some situation because of the biasness of enumerators.

7. Secondary Data

The data which has been already collected by other person or agency are and are used by any other person or agency for their statistical work.

Sources of Secondary Data

Published	Unpublished
• Official reports and publication	Records maintained
• Semi-official; NEB, NEC, etc. reports and publications	by private forms, various offices, hospitals, various
• Reports and publications of NGOs, INGO, UNDP, ADB, WHO, etc.	departments of Governments, etc.
• Reports and publications published by research institutions CEDA, TU, KU, PU.	
• Journals and Newspaper periodicals.	

8. Merits of Secondary Data

- It saves time and cost of survey.
- If a trained person collects secondary data, the quality of secondary data is better.
- The scope of enquiry can be increased in terms of area and time to be covered.

9. Demerits of Secondary Data

- The definitions of terms and units used in secondary data are not usually known.

- Secondary data obtained from two different sources may not be comparable in terms of definitions, units and time covered.
- Some information is comitted.
- Data may not be in the exact form as required by the researches.

10. Precautions in using Secondary data.
- Reliability of data
- Suitability of data
- Adequacy of data