

INTRODUCTION TO STATISTICS

BY- NIRBHAY JHA

STATISTICS IN SINGULAR SENSE

- “Statistics may be defined as the collection, presentation, analysis, and interpretation of numerical data.” —Croxtton and Cowden.

STAGES OF STATISTICAL STUDIES



IMPORTANCE OF STATISTICS IN ECONOMICS

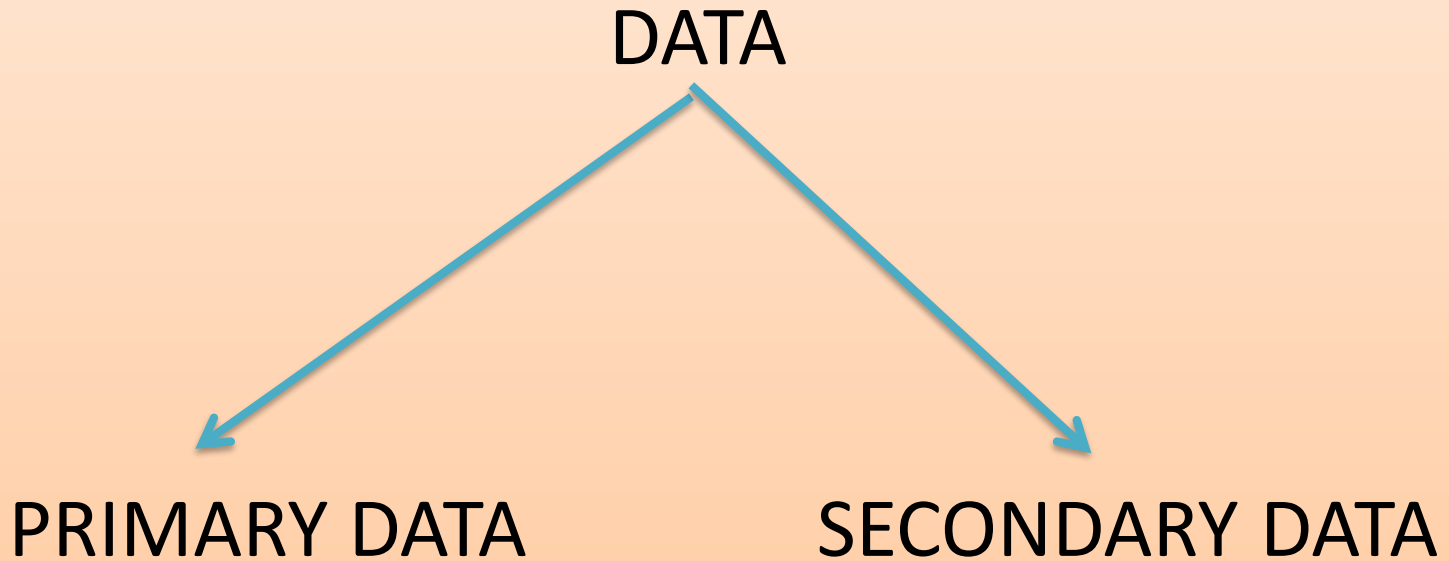
- Statistics helps to present economic problems and economic facts quantitatively.
- Statistics can be used for inter sectoral and inter temporal comparisons.
- The finance Minister uses data to take major policy decisions.
- It helps an economist to understand an economic problem. Proper understanding of the problem is needed to make policies to solve it.
- It helps to find the relationship between various economic factors. For example: By analysing data, we can understand the relationship between price and quantity demanded.
- It helps to make economic forecasting.
- It helps to construct and verify the theories of Economics.

LIMITATIONS OF STATISTICS

- Statistics deals only with quantitative facts. It does not deal with qualitative facts.
- It deals with only aggregate of facts. It does not deal with individual numerical facts.
- Statistical results are true only on averages.
- Statistics deals with only homogeneous data.
- Statistical facts can be misused.
- Statistical methods can be used only by experts.

COLLECTION OF DATA

- DATA: Numerical facts from which meaningful conclusions can be drawn



Primary Data: The [data](#) collected for the first time by an investigator for a specific purpose.

Example: [Census of India](#).

Secondary Data: Secondary data is the data that have been already collected by sources other than the investigator.

Examples: Census, Reports of NSSO

PRIMARY DATA

SECONDARY DATA

It is original data

It is already existing data

It is collected by the investigator by himself

It is collected by someone else for some other purpose.

It is expensive

It is less expensive

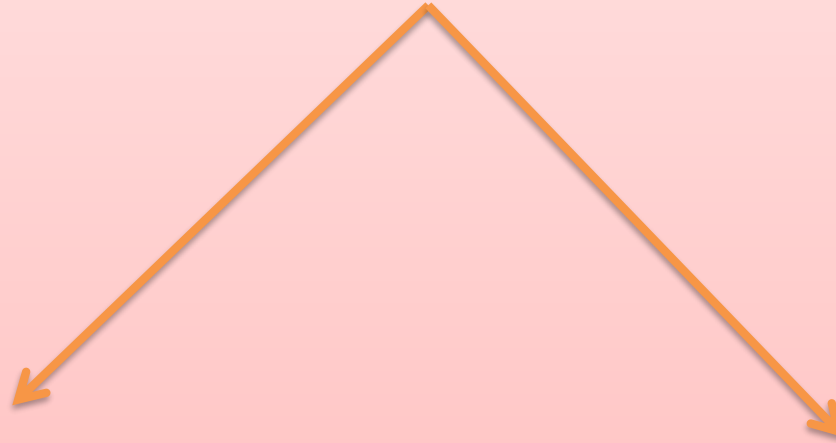
It is time consuming

It is less time consuming

It is more accurate

It is less accurate

METHODS OF DATA COLLECTION



CENSUS METHOD

SAMPLING METHOD

CENSUS METHOD	SAMPLE METHOD
Data are collected from the entire population	Data are collected from a selected sample
It is a time consuming method	It is a time saving method
It is reliable and accurate	Accuracy and reliability are less
It is difficult to identify errors	Errors can be easily identified
It is expensive	It is less expensive

QUESTIONNAIRE

Questionnaire refers to a set of questions

prepared by the investigator in order to collect the information needed for statistical investigation.

We Need Your Feedback!

You have successfully signed out of your SurveyMonkey account. Now help SurveyMonkey improve by taking this short customer satisfaction survey. All feedback will be kept confidential.

1. How likely are you to recommend SurveyMonkey to someone else?

- Extremely likely
- Very likely
- Somewhat likely
- Slightly likely
- Not at all likely

2. Given the services provided by SurveyMonkey, is the price too low, too high, or about right?

- Much too low
- Somewhat too low
- A little too low
- About right
- A little too high
- Somewhat too high
- Much too high

3. Is SurveyMonkey the only online survey tool you use?

- Yes
- No

If no, please specify other online survey tools you use:

QUALITIES OF A GOOD QUESTIONNAIRE

- The questionnaire should not be very long. Number of questions should be limited.
- Questions should be simple and easy to understand.
- Questions should be in a proper order.
- Clear instructions should be given as introduction.
- Personal questions and controversial questions should be avoided.
- Questions that involve mathematical calculations should be avoided.

METHODS OF COLLECTING PRIMARY DATA

- Direct Personal Interview Method.
- Indirect Oral Investigation Method.
- Mailed Questionnaire Method.
- Telephone Interview Method.
- Information from local sources or correspondents.

SOURCES OF SECONDARY DATA

```
graph TD; A[SOURCES OF SECONDARY DATA] --> B[PUBLISHED SOURCES]; A --> C[UNPUBLISHED SOURCES]; C --> D[Data collected for self use by the Government and Private agencies];
```

PUBLISHED SOURCES

- Government Publications
- Semi Government Publications
- Reports of Committees and Commissions
- Journals and News Papers
- Publications of research Institutes
- International Publications

UNPUBLISHED SOURCES

↓

Data collected for self use by the Government and Private agencies