Statistics for Economics
Chapter-1 : Introduction

According to Alfred Marshall Economics is "the study of man in the ordinary business of life"

IMPORTANT TERMS:

1. **Producer –** When a person produces goods or provides services, they are called a producer. Example: farmer, manufacturing company, doctor, porter, taxi driver or transporter of goods
2. **Consumer –** When a person buys goods to satisfy wants (their own, their family or another person) they are called a consumer.
3. **Employee –** When a person is employed by someone and is paid a wage or a salary, they are called an employee.
4. **Employer –** When a person employs someone, giving them a wage or a salary, they are an employer.
5. **Economic Activity –** Economic activities are activities that are undertaken for monetary gain. This is what economists mean by ordinary business of life. Example: teacher teaching in a school, accountant working in a company, gardener hired to maintain a park, worker working in a factory, farmer working in a field and selling crops in the market, etc.
6. **Seller –** When a person sells goods to make a profit for themselves they are called a seller. Example: shopkeeper
7. **Economics:** "Economics is the study of how people and society choose to employ scarce resources that could have alternative uses in order to produce various commodities that satisfy their wants and to distribute them for consumption among various persons and groups in society."

Scarcity is the root of all Economic problems

Scarcity: Scarcity is the shortage of goods and resources in relation to their demand.

We face scarcity because the things that satisfy our wants are limited in availability. Human wants are unlimited, but the resources are scarce and have alternative uses. The same resources can be used in the production of different goods and services. This alternative use of resources gives rise to the problem of choice between different commodities that can be produced by those resources.

Types of Economic activities:

a. Consumption: It is an economic activity which is concerned with the use of goods and services for the satisfaction of human wants, given the income of consumers and prices of goods. Ex: eating bread, drinking milk etc.

b. Production: It is an economic activity which is undertaken to produce goods and services for generation of income. Ex: activities of farmers, carpenter, teacher, doctor etc**.**

c. **Distribution:** It is an economic activity which studies how national income generated is distributed among the factors of production. Land, Labour, Capital, Enterprise/Entrepreneurship are the four factors of production and their payments are rent, wages, interest, profits.

Statistics in Economics/Relationship between Statistics and Economics/How Statistics helps Economics

Economics data: Economic facts are also known as economic data. The purpose of collecting data about the economic problems is to understand and explain these problems in terms of the various causes behind them.
Economic policies: They are measures that help solve an economic problem.

An analysis of an economic problem would not be possible without economic data on various factors underlying an economic problem. In such a situation, no policies can be formulated to solve the economic problem.

What is Statistics?

Statistics – Statistics deals with the collection, analysis, interpretation and presentation of numerical data. It is a branch of mathematics and also used in the disciplines such as accounting, economics, management, physics, finance, psychology and sociology.

Most economic data are quantitative. Example: the production of rice in India has increased from 39.58 million tonnes in 1974–75 to 106.5 million tonnes in 2013–14

Economics also uses qualitative data which describes attributes which cannot be measured in quantitative terms. Ex: gender that distinguishes a person as man/woman or boy/girl.

Such qualitative information or statistics is often used in Economics. It is collected and stored systematically like quantitative information (on prices, incomes, taxes paid, etc.).

Functions of Statistics

1. **It helps to understand economic problems and formulate policies:** Statistics help economists understand economic problems. Using the methods of statistics, we can find the causes behind problems with the help of qualitative and quantitative facts. Finally, we formulate certain policies to tackle the problem.
2. **It helps to present economic facts in a precise and definite way:** When economic facts are expressed in statistical terms, they become exact. Exact facts are more convincing than vague statements. Ex: ‘Poverty in India has declined’ is a vague statement. However, the statement ‘India's poverty rate declined to 4.5-5% in 2022-23’ is more convincing.
3. **It helps in condensing mass data into a few numerical measures**: Statistics measures such as mean, variance, etc., are numerical measures which help to summarise data. For example, it would be impossible to remember the incomes of all the people in a locality. But, a summary figure like the average income is easier to remember.

4. **It is used in finding relationships between different economic factors:** Statistical methods can be used to identify and verify whether relationships exist between economic variables. Ex: An economist may be interested in finding out what happens to the demand for a commodity when its price increases or decreases?
5. **It helps in formulation of plans and policies that requires the knowledge of future trends:**
   Ex: If the economic planners need to decide in 2023 how much the economy should produce in 2030, they should know the expected level of consumption in 2030. They might need to make a subjective judgment or they can use statistical tools to predict consumption.

QUANTITATIVE DATA	QUALITATIVE DATA
It can be expressed in numerical terms.	It describes the attributes which cannot be measured.
Statistical analysis is easier	Statistical analysis is harder
Eg: marks of students, no. of illiterates in a country, weight of people etc.	Eg: gender, honesty, beauty, poverty, health,etc.

Statistical methods are no substitute for common sense!

Any harm caused to an incorrect interpretation of statistical facts is not the fault of statistics. For example, a family of four persons (husband, wife and two children) wants to cross a river. If the average depth of the river is four feet and the average height of the family is five feet, and the family crosses the river due to this reason, some members of the family (children) will drown while crossing the river. But, the fault here is not of statistics but of the ‘misuse’ of the concept of averages.