# ECONOMICS

**SUBJECT : STATISTICS**
**CHAPTER NUMBER:3**
**CHAPTER NAME : ORGANISATION OF DATA**

# CLASSIFICATION

- Classification is the process of arranging data in two sequences and Groups according to their common characteristic for separating them into different but related parts.

## OBJECTS OF CLASSIFICATION

- The main objectives of classifications are: to simplify and condense the mass of data to explain similarity and dissimilarity of data

- To facilitate comparison

- To study the relationship

- To prepare the data for tabulation

- To present a mental picture

## REQUISITES OF A GOOD CLASSIFICATION:

- **Suitability**: should confirm to the object of the enquiry .

- **Unambiguous**: it should not lead to any ambiguity or confusion

- **Exhaustiveness**: it should be exhaustive.

- **Flexibility**: it should be capable of being adjusted according to the change situation and conditions.

- **Mutually exclusive**: the classes must not overlap so that an observed value belongs to one and only one of the classes.

## REQUISITES OF A GOOD CLASSIFICATION

- **Stability**: the principle of classification was decided, should remain same throughout the analysis.

- **Homogeneity**: all units belonging to a group should exhibit similar characteristics.

## METHODS OF CLASSIFICATION

- **Geographical classification**: according to geographical location or region.

- **Chronological classification**: with respect to different periods of time.

- **Qualitative qualification**: classification on the basis of attributes like sex, literacy, region, cast, education .it is of two types: simple classification and manifold classification

- **Quantitative classification**: it is measure such as height, weight, income-expenditure, production or sales.

# SATE-WISE ESTIMATES OF PRODUCTION OF FOOD GRAINS

| S.NO. | Name of states | Total food grains (thousands tones) |
|:---:|:---:|:---:|
| 1 | ANDHRA PARDESH | 1093.90 |
| 2 | BIHAR | 12899.89 |
| 3 | KARNATAKA | 1834.78 |
| 4 | PUNJAB | 21788.20 |
| 5 | UTTER PRADESH | 41828.30 |

# POPULATION OF INDIA 1941 TO 1991

| S.No. | year | Population in crores |
|---|---|---|
| 1 | 1941 | 31.87 |
| 2 | 1951 | 36.11 |
| 3 | 1961 | 43.91 |
| 4 | 1971 | 54.82 |
| 5 | 1981 | 68.33 |

# ALPHABETICAL CLASSIFICATION

- When the data are arranged according to alphabetical order, it is called alphabetical classification. For example state-wise density of population in India is depicted in an alphabetical order below;

# SHOWING THE DENSITY OF POPULATION IN AN ALPHABETICAL ORDER

| Names of States | Density of Population (Per Sq. Km) |
|---|---|
| Andhra Pradesh | 157 |
| Assam | 150 |
| Bihar | 324 |
| Gujarat | 136 |
| Haryana | 225 |
| Himachal Pradesh | 62 |
| Kerala | 548 |

# QUANTITATIVE CLASSIFICATION

| Weight (kg) | No. of Students |
|---|---|
| 40-50 | 60 |
| 50-60 | 50 |
| 60-70 | 28 |
| 70-80 | 20 |
| 80-90 | 12 |
| Total | 170 |

- **Variable** refers to quantity attribute whose value series from one investigation to another it is of two kinds discrete variable continuous variable.

- **Frequency** refers to number of times a given values appear in a distribution.

- **Frequency distribution** refers to a table in which the frequencies and the associated values of a variable are written side by side.

- **Statistical series:** The arrangement of classified data in some logical order like according to the size according to the time of experience or according to some other measurable or non-measurable characteristic is known as statistical series

# Concept of Variable

► A characteristic or a phenomenon which is capable of being measured and changes its value overtime is called variable.

## A) Discrete Variable

Discrete variables are those variables that increase in jumps or in complete numbers. (No fraction is possible)

Eg. Number of students in a class, Number of cars in a show room etc. (1,2, 10,or 15 etc.)

## B) Continuous Variables

Variables that assume a range of values or increase not in jumps but continuously or in fractions are called continuous variables.

Eg. Height of the boys – 5'1", 5'3" and so on, Marks in any range 0-10, 10-15, 15-20

# KINDS OF STATISTICAL SERIES:

- On the basis of characteristic

- On the basis of constructions

- On the basis of characteristics:

# TIME SERIES :

- If the different values that a variable has taken in a period of time are arranged in a chronological order that series so obtained is called time series.

# SPATIAL SERIES

The data arranged according to the location of geographical consideration form a spatial series.

## CONDITION SERIES:

Data is classified according to changes occurring under certain conditions.

## Statistical series on the basis of construction:

- Individual series

- Discrete series

- Continuous series

## INDIVIDUAL SERIES

- refers to that series in which items are listed singly ,each item is given a separate value of measurement individual series of two types:

- **Unorganized individual**: raw data

- **Organized individual series**:

- 1. According to serial number

- 2. According to order of magnitude ascending or descending order.

Discrete series for ungrouped frequency distribution refers to a series where individual values differ from each other by definite amount.

Continuous series of grouped frequency distribution refers to a series which present continuous variable showing range of values of different items of the series.

## IMPORTANT TERMS UNDER CONTINUOUS SERIES

- **Class**: class hair by means of a group of number in which items are placed such as 0 -10 ,10 -20, 20 -30.

- **Class limits**: the lowest and highest values of the variables within a class is called class limit.

- **Class interval**: the difference between the lower limit and upper limit is known as class interval.

- **Width of the class**: intervals it can be determined by the following formula:

- **Width of the class interval**= largest observation -smallest observation /number of classes desired.

- **Range**: refers to difference between the lower limit of first-class interval and the upper limit of the last class interval midpoint or mid value: it is a central point of a class interval.

- **Class frequency**: refers to number of observations corresponding to a particular class.

# Exclusive Series

Exclusive Series: Excluding the upper limit of these classes, all the items of the class are included in the class itself. E.g., :

| Marks | 0-10 | 10-20 | 20-30 | 30-40 |
|---|---|---|---|---|
| Number of Students | 2 | 5 | 2 | 1 |

# Inclusive Series

Inclusive Series: Upper class limits of classes are included in the respective classes.

E.g.,

| Marks | 0-9 | 10-19 | 20-29 |
|---|---|---|---|
| Number of Students | 2 | 5 | 2 |

# Open Ended Classes

Open End Classes : The lower limit of the first class and upper limit of the last class are not given. E.g.,

| Marks | Below 20 | 20-30 | 30-40 | 40-50 | 50 and above |
|---|---|---|---|---|---|
| Number of Students | 7 | 6 | 12 | 5 | 3 |

| Marks | No. of Students |
|-------|-----------------|
| 0-10  | 2  |
| 10-20 | 5  |
| 20-30 | 10 |
| 30-40 | 12 |
| 40-50 | 17 |
| 50-60 | 4  |

Total = 50

| Marks | No. of Students |
|-------|-----------------|
| Less than 10 | 2  |
| Less than 20 | 7  |
| Less than 30 | 17 |
| Less than 40 | 29 |
| Less than 50 | 46 |
| Less than 60 | 50 |

| Marks | No. of Students |
|-------|-----------------|
| More than 0  | 50 |
| More than 10 | 48 |
| More than 20 | 43 |
| More than 30 | 33 |
| More than 40 | 21 |
| More than 50 | 4  |

# TYPES OF CONTINUOUS SERIES:

- Exclusive series : Like 10-20,20-30 upper limit of one class interval becomes the lower limit of next class.

- Inclusive series :Like 10-19,20-29

- Open end distribution

- Cumulative frequency series: Less than and more than method

- Equal class interval series: same class interval

- Unequal class intervals series

- Mid value series.

## BIVARIATE FREQUENCY DISTRIBUTION

- When the data is classified on the basis of two variables such as height and weight, marks in statistics and economics etc. The distribution is known as bivariate frequency distribution or two ways frequency distribution.

## UNIVARIATE  FREQUENCY DISTRIBUTION

When data is classified on the basis  of single variable, like height of the student in a class.

# THANKING YOU
# ODM EDUCATIONAL GROUP

## CHANGING YOUR TOMORROW