

Statistical Methods

B.A.-II
Practical Geography

①

Introduction -

An average is sometimes called a 'measure of central tendency' because individual values of the variable usually cluster around it. An average value is a single value within the range of data that is used to present all of the values in the series.

Types of Average -

- 1) Arithmetic Mean
- 2) Median &
- 3) Mode

1) Arithmetic Mean →

Arithmetic Mean is the number obtained by dividing the total value of different information by their numbers. There are two kinds of arithmetic mean

- a) Simple arithmetic Mean
- b) Weighted arithmetic Mean

a) Calculation of simple arithmetic mean

- i) Series of individual observations
- ii) Discrete Series
- iii) Continuous series

(i) Series of individual observations

$$\bar{x} = \frac{x_1 + x_2 + x_3 + \dots + x_n}{N}$$

where, $\bar{x} = \frac{\sum x}{N}$

$\bar{x}$ = Arithmetic Mean
 $\sum x$ = Sum of all values of variables
($x_1 + x_2 + x_3 + \dots + x_n$)

N = Number of observations

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Q1. Calculate the arithmetic mean of the daily income of the employees.

Employee	1	2	3	4	5	6	7	8	9	10
Income	20	25	35	55	30	50	40	60	45	65

Solution

Direct Method

Employees	Income
1	20
2	25
3	35
4	55
5	30
6	50
7	40
8	60
9	45
10	65
Total	$\Sigma x = 425$

Where; $\bar{x} = \frac{\Sigma x}{N}$

$\bar{x} = \frac{\Sigma x}{N} = \frac{425}{10}$, $N = 10$

$\bar{x} = \frac{425}{10} = 42.5$

Answer = 42.5

Q2. Calculate the arithmetic mean of the marks in Geography

Students	A	B	C	D	E	F	G	H	I	J	K
Marks	15	12	18	24	22	30	25	16	26	28	14

Solution -

Students	Marks
A	15
B	12
C	12
D	20
E	22
F	30
G	25
H	16
I	26
J	28
K	12
Total	$\Sigma x = 230$

$$\text{where; } \bar{x} = \frac{\Sigma x}{N}$$

$$\Sigma x = 230$$

$$N = 11$$

$$\bar{x} = \frac{\Sigma x}{N} = \frac{230}{11}$$

$$= 20.90 \quad \text{Answer}$$

Therefore, Series of Individual measurement is easy to calculate. We divide the total values by numbers of observations.