

4th May

THE MEAN OF THE RATIO

Sometimes the population is heterogeneous and we have to divide it into two or more parts.

❖ Practice problem 5

Data of two companies are the following:

| Gender | A company | | B company | |
|--------|--------------------------------|------------------------|--------------------------------|------------------------|
| | Total income (Thousand Fts) | Number of employees | Total income (Thousand Fts) | Number of employees |
| Male | 2400 | 50 | 1000 | 20 |
| Female | 300 | 10 | 1000 | 30 |
| Sum | 2700 | 60 | 2000 | 50 |

or

- Compute the proportion ratio of the number of employees
- Compute intensity ratios.

Solution

- Proportion ratio

| Gender | A company | | B company | |
|--------|--------------------------------|------------------------|--------------------------------|------------------------|
| | Total income (Thousand Fts) | Number of employees | Total income (Thousand Fts) | Number of employees |
| Male | 2400 | 83,3 | 1000 | 40,0 |
| Female | 300 | 16,7 | 1000 | 60,0 |
| Sum | 2700 | 100,0 | 2000 | 100,0 |

- Intensity ratios.

$$\text{Per capita income (V)} = \frac{\text{total income}(A)}{\text{number of employees}(B)}$$

$$\text{Group per capita income (V}_j\text{)} = \frac{\text{group income}(A_j)}{\text{number of employees}(B_j)} \quad A_j = B_j \cdot V_j \quad B_j = \frac{A_j}{V_j}$$

The mean of the ratio

Aggregate formula

$$\bar{V} = \frac{\sum A_j}{\sum B_j} = \frac{2700}{60} = 45 =$$

Weighted average formula