Report on salary distribution analysis

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1.Description of the data :

The Numpy, Matplotlib, and Scipy packages are used by the included Python script to analyse and display salaries in a European country. It is presumed that the information is kept in a CSV file(data6.csv) that is kept in the same directory as the script. The dataset only has one column, which represents the yearly salary.

2.Description of the distribution :

A histogram with 30 bins is used to show the salary distribution. This sheds light on the wage distribution and concentration within the dataset. On the histogram, the computed mean salary and the percentage of the population with wages between the mean and 1.25 times the mean are indicated. The x-axis represents the annual salaries in euros, and the y-axis represents the probability density.

3.Calculation of Mean ($W\sim$) :

The mean annual salary is calculated using the numpy library's np.mean() function, considering all entries in the'salary' column of the dataset.

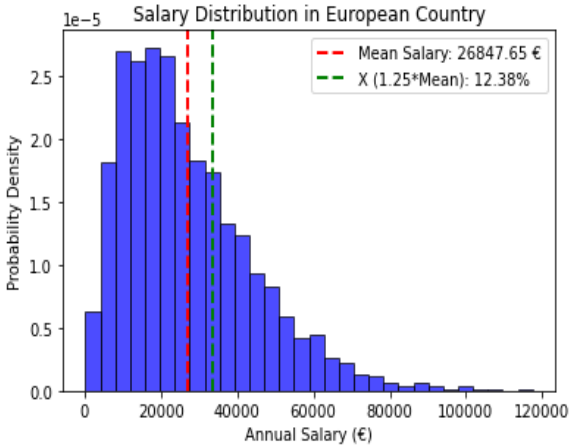
$$w\sim = \frac{1}{n}\sum_{i=1}^{n} xi$$

Where 'n' is the total number of data points (salaries) and 'xi' is the i-th individual's salary.

4. Fraction(X)Calculation :

The following formula is used to get the percentage of the population (X) having wages between the mean salary and 1.25 times:

$$X = \frac{\text{number of individuals with salaries between } W\sim \text{ and } 1.25W\sim}{N}$$



Interpretation :

The pay distribution is shown graphically via the histogram. The dataset's central tendency is shown by the mean salary. Fraction X shows the percentage of people whose incomes fall into certain ranges around the mean

Results:

The graph produced by the Python code shows that, for the supplied dataset, the computed mean salary (W~) is 26847.65 €, and the proportion of the population (X) having wages between W~ and 1.25W~ is 12.38%.

Conclusion :

This study offers quantitative data, such as mean pay and a certain percentage of the population, as well as a clear graphic depiction that sheds light on the wage distribution in the European nation.