Silesian University of Technology

Applied Statistics
Laboratory 1

As a company owner you would like to reduce some cost due to COVID pandemic. You have noticed that training of new employee is very expensive yet many resign after less than a year. You would like to investigate what could affect their decision. Thus you decide to investigate the salary of 50 randomly chosen employees working more than 1 year in our company vs 50 of those who work shorter period of time.

1) Calculate mean, median, lower and upper quantiles (25%, 75%) and standard deviation for each investigated group of employees. What can you say based on those statistics?

2) Draw a boxplot for each group separately. Can you see any differences? Describe them.

3) Draw histogram for each group separately (keep the same x axis range, and set no. of bins as sqrt(n) ; where n represents no. of measurements in particular group). Can you see any differences? Describe them.

4) Using statistical test check if the variances of both groups are equal. Please state the hypothesis, give test statistic value and p-value. Finally, make a conclusion based on obtained results.

5) Including the information from previous test and assuming that the salary is normally distributed perform statistical test which will check if the salary between two groups is equal. Please state the hypothesis, give test statistic value and p-value. Finally, make a conclusion based on obtained results.