Questions

Statistical Decisions and Econometrics

2021-2022

1) Sample, Sample characteristics (mean, variance, standard deviation, mode median, quantile).
2) Histogram, Empirical Cumulative distribution function
3) Criteria for testing goodness of fit of distribution models: Kolmogorov, Pearson (chi-square),
4) Uniformity criteria for two or more samples (Kolmogorov Smirnov test, Mann–Whitney test, Wilcoxon Test).
5) Parametric hypotheses for two samples. Equality criteria for mean and variances (Student test, Fisher test).
6) Parametric hypotheses for one sample. Criteria about the value of distribution parameters.
7) Non-Parametric Hypotheses. Median test.
8) Basic assumptions of linear regression analysis. Normal (Gaussian) distribution.
9) Verification of homoskedasticity using the Goldfeld-Quandt method.
10) Properties of estimates of the method of least squares of linear regression coefficients. Dispersion matrix of estimates.
11) Student distribution. Testing hypotheses about the values of linear regression coefficients. Checking the statistical significance of coefficient estimates. Confidence intervals for linear regression coefficients.
12) Fisher distribution. Coefficient of determination. Testing the hypothesis of the statistical significance of multiple linear regression as a whole.
13) Point forecast. Confidence intervals for forecasting individual values.
14) Nonlinear paired regression. Classification of nonlinear dependencies. Methods for evaluating parameters.
15) Private correlation coefficient. Multiple correlation coefficient.
16) Formal statistical methods for checking the adequacy of the selected model with the available statistical data.
17) Correction of statistical conclusions in the presence of heteroskedasticity, in the presence of autocorrelation of errors, in the presence of seasonality. Multicollinearity, dummy variables.
18) Classification analysis. The key features of Classification
19) What is the input and output (have label)
20) Describe the decision tree process.
21) What are the formulas included in the decision tree task (Entropy)
22) Clustering analysis.The key features of Clustering
23) What is the input and output?
24) Describe the K-mean process. What are the formulas included in the K-mean task (Distance function)