

Help on Simple Seasonality

This option examines the seasonality of the sample data by using various bilateral Empirical Distribution Tests (EDT). Particularly, we test the hypothesis that two empirical samples e.g., Sunday and Monday, come from the same distribution. The examined seasonality can be daily i.e., Day Of the Week (usually Sunday..Friday), weekly (week1..week53), monthly (Jan..Dec), and quarterly (Qtr1..Qtr4). Included non parametric tests are: Kolmogorov-Smirnov (ks), Anderson-Darling (ad), Cramer-von Mises (cvm), and Kuiper (kuiper). For a comparison of these tests and the procedure used see:

<https://cran.r-project.org/web/packages/twosamples/twosamples.pdf>. The output contains two panels: The upper panel shows some basic statistics on the sub samples (seasons) e.g., mean, median.. of Sunday, Monday,...Friday. The lower panel presents bilateral p-values of the tests (small figures reflect a rejection of the null that the two sub samples come from the same empirical distribution). An example of daily simple seasonality of the variable TD, based on Anderson-Darling (ad) test is depicted below.

Basic statistics of simple seasonality in series: TD

| | mean | median | max | min | sd | Obs. |
|-----|-------------|---------------|------------|------------|-----------|-------------|
| Mon | 0.032 | 0.131 | 4.177 | -7.199 | 1.090 | 337 |
| Tue | 0.052 | 0.062 | 3.848 | -3.939 | 0.786 | 340 |
| Wed | 0.024 | 0.054 | 2.922 | -3.741 | 0.807 | 337 |
| Thu | 0.052 | 0.058 | 3.773 | -3.182 | 0.773 | 338 |
| Fri | -0.117 | -0.050 | 2.330 | -4.294 | 0.824 | 339 |

Bilateral tests of equality by ad test (P-Values)

| | Mon | Tue | Wed | Thu | Fri |
|-----|------------|------------|------------|------------|------------|
| Mon | 1 | 0.017 | 0.0715 | 0.0230 | 0.0015 |
| Tue | NA | 1.000 | 0.6710 | 0.7800 | 0.0145 |
| Wed | NA | NA | 1.0000 | 0.8035 | 0.0750 |
| Thu | NA | NA | NA | 1.0000 | 0.0255 |
| Fri | NA | NA | NA | NA | 1.0000 |