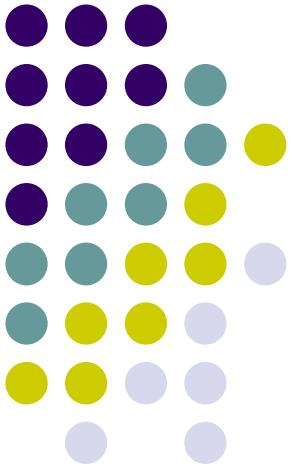
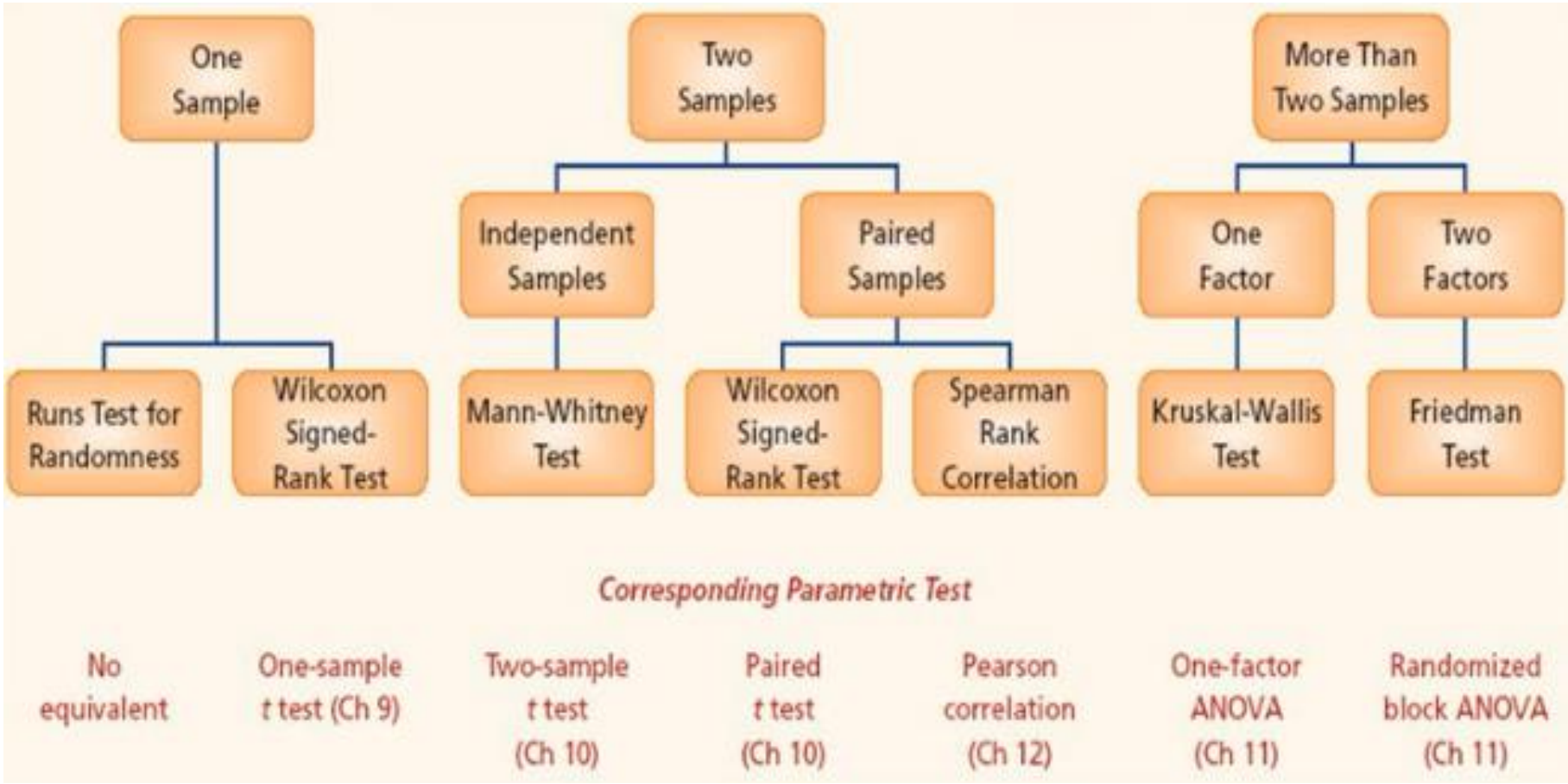
Non-Parametric Tests

Dr. Yazdan Asgari

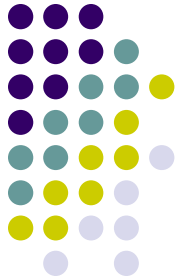


2019

Parametric vs. Non-parametric tests



Non-Parametric Tests

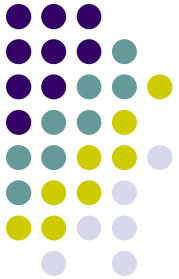


- A statistical method is called non-parametric if it makes no assumption on the population distribution or sample size.

- This is in contrast with most parametric methods in elementary statistics that assume the data is quantitative, the population has a normal distribution and the sample size is sufficiently large.

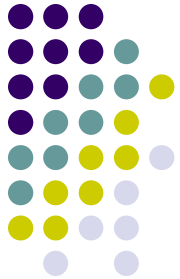
- In general, conclusions drawn from non-parametric methods are not as powerful as the parametric ones. However, as non-parametric methods make fewer assumptions, they are more flexible, more robust, and applicable to non-quantitative data.

Wilcoxon Signed-Rank Test



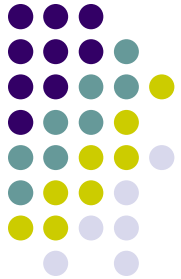
- Two data samples are matched if they come from repeated observations of the same subject. Using the Wilcoxon Signed-Rank Test, we can decide whether the corresponding data population distributions are identical without assuming them to follow the normal distribution.

Mann-Whitney-Wilcoxon Test



- Two data samples are independent if they come from distinct populations and the samples do not affect each other. Using the Mann-Whitney-Wilcoxon Test, we can decide whether the population distributions are identical without assuming them to follow the normal distribution.

Kruskal-Wallis Test



- A collection of data samples are independent if they come from unrelated populations and the samples do not affect each other. Using the Kruskal-Wallis Test, we can decide whether the population distributions are identical without assuming them to follow the normal distribution.

Was it useful?