Mann-Whitney U Test

Nathaniel Yomogida, SPT Chloë Kerstein, SPT

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AKA:

- Wilcoxon Rank Sum test

1 Practical uses

- Non-parametric counterpart to the T-Test for independent samples

2 Definition

- An analog of the parametric Student's t-test[1]
- Compares the means between two independent groups with the assumption that the data is not in a normal distribution[1].

- Useful for numerical/continuous variables[1].

> **Example**
>
> For example, 2 different groups' age or height (continuous variables), in a study with non-normally distributed data[1]

3 Variables

3.1 Independent variables

Nominal/ordinal variable with 2 expressions

> **Common Examples**
>
> E.g. Meds: Drug & Placebo

3.2 Dependent variables

Metric/ordinal variable

> **Common Examples**
>
> E.G.: Salary, wellbeing, weight

4 Processing

Rank sum

5 Requirements

- Only 2 independent random samples
- At least ordinally scaled characteristics

6 Benefits

- Does not need to be normally distributed

7 Hypothesis

- **Null hypothesis**: There is no difference (in terms of central tendency) between the two groups in the population.
- **Alternative hypothesis**: There is a difference (with respect to the central tendency) between the two groups in the population

1. Sundjaja JH, Shrestha R, Krishan K. McNemar And Mann-Whitney U Tests. In: *StatPearls*. StatPearls Publishing; 2023. Accessed October 3, 2023. http://www.ncbi.nlm.nih.gov/books/NBK560699/