Social Science Statistics

Wilcoxon Signed-Rank Test Calculator

Success!

Explanation of results

We have calculated both a W-value and Z-value. If the size of *N* is at least 20 - see the Results Details box - then the distribution of the Wilcoxon W statistic tends to form a normal distribution. This means you can use the Z-value to evaluate your hypothesis. If, on the other hand, the size of *N* is low, and particularly if it's below 10, you should use the W-value to evaluate your hypothesis.

You should also note that if a subject's difference score is zero - that is, if a subject has the same score in both treatment conditions - then the test discards the individual from the analysis and reduces the sample size. If you have a lot of ties, this procedure will undermine the reliability of the test (and also suggests that the requirement that the data is continuous has not been met).

Treatment 1	Treatment 2	*Sign*	*Abs*	*R*	*Sign R*
11238	11238	n/a	0	n/a	20
11804	11596	1	208	5	15
11787	8932	1	2855	20	-14
11723	9753	1	1970	15	16
8164	9780	-1	1616	14	23
11802	9781	1	2021	16	2
9985	5782	1	4203	23	24
11803	11749	1	54	2	19
11806	7284	1	4522	24	17
11807	9386	1	2421	19	13
11802	9653	1	2149	17	10
11807	10594	1	1213	13	8
11802	10848	1	954	10	26
11801	11551	1	250	8	25
11807	1701	1	10106	26	11
11813	6203	1	5610	25	21
11805	10720	1	1085	11	22
9600	6371	1	3229	21	3
11733	8160	1	3573	22	18
9589	9428	1	161	3	1
11800	9463	1	2337	18	4
11805	11799	1	6	1	9
11836	11655	1	181	4	7
11805	11512	1	293	9	6
11804	11573	1	231	7	12

Significance Level:

- ○ 0.01
- ◉ 0.05

1 or 2-tailed hypothesis?:

- ○ One-tailed
- ◉ Two-tailed

Result Details

W-value: 14
Mean Difference: -190.73
Sum of pos. ranks: 337
Sum of neg. ranks: 14

Z-value: -4.1018
Mean (*W*): 175.5
Standard Deviation (*W*): 39.37

Sample Size (*N*): 26

Result 1 - Z-value

The Z-value is -4.1018. The p-value is 0. The result is significant at p≤ 0.05.

Result 2 - W-value

The W-value is 14. The critical value of *W* for *N* = 26 at p≤ 0.05 is 98. Therefore, the result is significant at p≤ 0.05.

Calculate Reset

Navigation Menu

- Home
  - Descriptive Statistics
    - Mean, Median & Mode Calculator
    - Variance/Standard Deviation Calc.
    - Easy Histogram Creator
    - Easy Bar Chart Creator
  - Statistical Calculators
    - Chi^2 for 5 x 5 (or Less) Table
    - Chi^2 for 2 x 2 Table
    - Fisher Exact Test for 2 x 2 Table
    - Chi^2 Goodness of Fit
    - Student T Test
    - T Test for Dependent Means
    - Single Sample T Test
    - Mann-Whitney U Value
    - Wilcoxon Signed-Rank
    - Pearson Correlation Coefficient
    - Spearman's Rho
    - Z Test for 2 Population Proportions
    - Z Test for Single Sample
  - P Value Calculators
    - P Value from Z Score
    - P Value from T Score
    - P Value from Chi^2 Score
    - P Value from Pearson r Score
  - Effect Size Calculators
    - Cohen's D for Z Test
    - Cohen's D for T Test