

Statistics How To

Tarone-Ware Test

[Log Rank Test](#) >

The **Tarone-Ware test** is a variant of the [log rank test](#). It is used in [survival analysis](#) to compare two different survival distributions.

The test can be used to compare a variety of different situations, including:

- Two [treatment groups](#) in a medical study,
- Drivers in two different car models in a series of crash tests,
- A project comparing compliance in ground water between a background location and test location.

Assumptions of the Tarone-Ware Test

To use the Tarone-Ware test you must assume that your two [populations](#) are [identically distributed](#) and also have equal [variance](#). You also need to assume temporal stability (no drastic change over time) and no spatial variability (consistent data over the test site).

Strengths and Weaknesses of the Tarone-Ware test

The Tarone-Ware test is non-ideal for very small samples; 8 to 10 measurements is usually recommended. It doesn't require [normality](#) in the data set, though data that is very far from a norm may possibly produce slightly skewed results.

Similar Tests

Other tests used to compare survival distributions, like the [Log rank test](#) and [Wilcoxon](#) test, are good for particular survival times (the log rank test for longer survival times, the Wilcoxon tests shorter survival times). One strength of the Tarone-Ware test is that it includes a '[tuning parameter](#)', k , with values between 0 and 1 which can be used to set up the test to emphasize long, short, or intermediate survival times.

- With $k = 0$, longer survival times are emphasized,
- If $k = 0.5$, intermediate survival time is emphasized,
- With $k = 1$, the emphasis is on shorter times.

Performing a Tarone-Ware Test

To perform a Tarone-Ware Test, simply go through the steps for the [Wilcoxon test](#), but weight your result with $W(t_j) = \sqrt{n_j}$ rather than the weight of $W(t_j) = n_j$ used for a Wilcoxon test.

References

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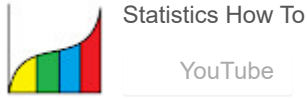
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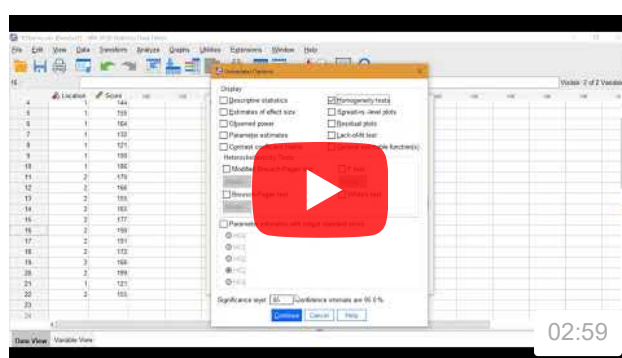
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