Wilcoxin's Test -- Analysis of 2-Within-Group Data with a Quantitative Response DV
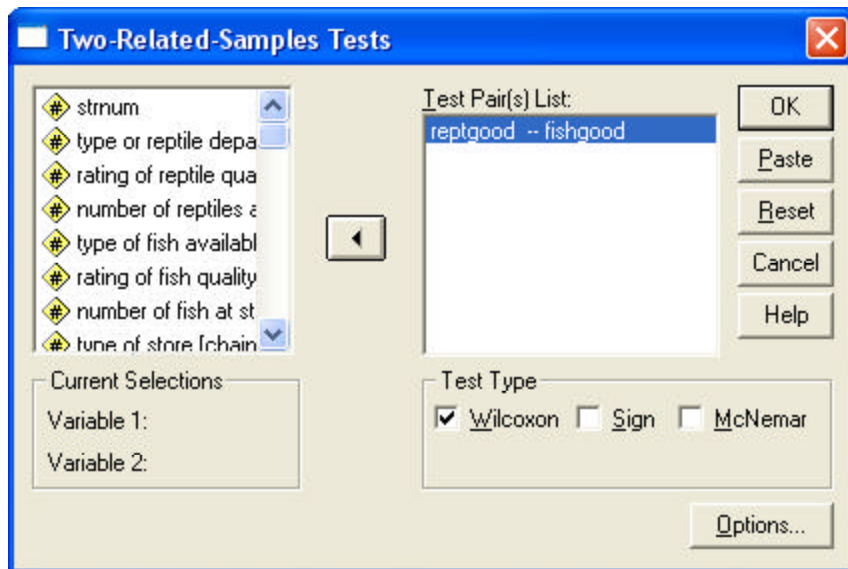
Application: To compare the distributions of scores of two quantitative variables (which are either ordinal or nonnormally distributed from a too-small sample) obtained from dependent samples (repeated measures or matched groups). The two scores might be the same variable measured at two different times or under two different conditions, two comparable variables measured at the same time, or some combination. Wilcoxin's is often used as a nonparametric substitute for the dependent (repeated measures, within-subject) t-test.

Research Hypothesis: The researcher hypothesized that a store's fish would be of higher quality than its reptiles, because of the greater difficulty obtaining and maintaining healthy reptiles.

Ho: The quality ratings of reptiles and and fish displayed by pet stores have the same distributions.

Analyze/Statistics ➔ Nonparametric Tests ➔ 2 Related Samples
*   highlight the two quantitative response variables and click the arrow to move
        them to the "Test Pair(s) List" window
*   be sure the "Wilcoxin" is checked

Descriptive Statistics

			Percentiles	
			50th	
	N	25th	(Median)	75th
'rating of reptile quality - 1-10 scale'	12	4.00	6.00	7.75
'rating of fish quality - 1-10 scale'	12	5.25	7.00	8.75

Univariate statistics for both of the variables (remember Q1 and Q3 are the 25th and 75th percentiles, respectively).

SPSS only presents the Z-score version of this significance test.

Test Statistics[b]

	'rating of fish quality - 1-10 scale' - 'rating of reptile quality - 1-10 scale'
Z	-.870[a]
Asymp. Sig. (2-tailed)	.384

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Reporting Results:

Contrary to the research hypothesis, there was no difference between the distribution of quality rating of fish (Median = 7.00, IQR = 5.25 - 8.75) and reptiles (Median =6.00, IQR = 4.00 - 7.75) in these stores (based on Wilcoxin test, Z = -870, p = .384).