

Spearman Rank Correlation

When the researcher's data represent ordinal measures such as ranks with some observations being tied for the same rank, the Rank Correlation may be the appropriate statistic to calculate. While the computation for the case of untied cases is the same as that for the Pearson Product-Moment correlation, the correction for tied ranks is found only in the Spearman correlation. In addition, the interpretation of the significance of the Rank Correlation may differ from that of the Pearson Correlation where bivariate normalcy is assumed. Shown below is an example for obtaining the Spearman Rank Correlation:

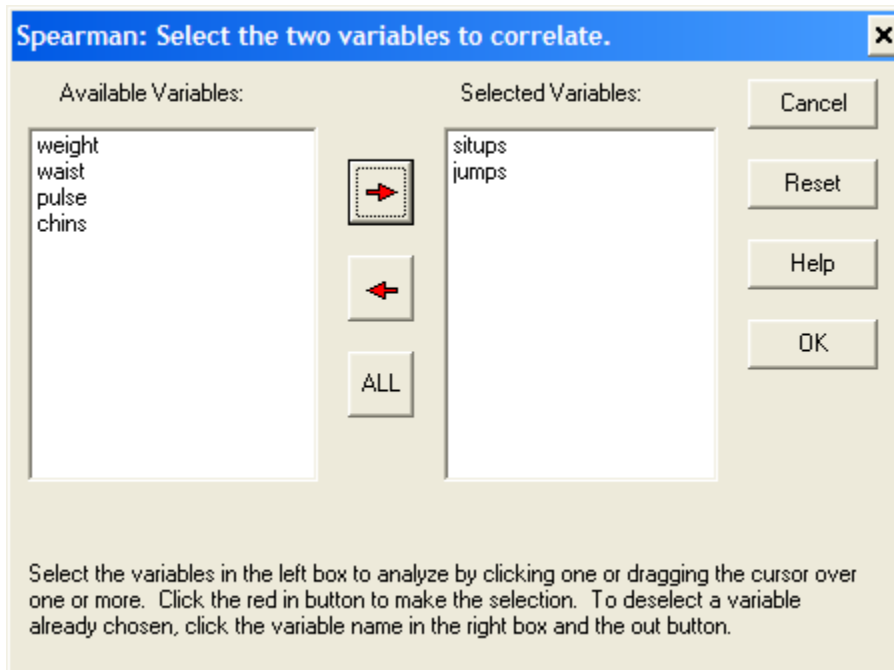


Figure 1. Spearman Rank Correlation Form

Spearman Rank Correlation Between situps & jumps

Number of cases without missing values = 20

Observed scores, their ranks and differences between ranks

situps	Ranks	jumps	Ranks	Rank Difference
162.00	13.00	60.00	12.50	0.50
110.00	8.50	60.00	12.50	-4.00
101.00	5.00	101.00	16.00	-11.00
105.00	7.00	37.00	3.00	4.00
155.00	12.00	58.00	11.00	1.00
101.00	5.00	42.00	8.00	-3.00
101.00	5.00	38.00	4.50	0.50
125.00	11.00	40.00	6.50	4.50
200.00	14.00	40.00	6.50	7.50
251.00	20.00	250.00	20.00	0.00
120.00	10.00	38.00	4.50	5.50
210.00	15.50	115.00	18.00	-2.50
215.00	17.00	105.00	17.00	0.00
50.00	1.00	50.00	10.00	-9.00
70.00	3.00	31.00	2.00	1.00
210.00	15.50	120.00	19.00	-3.50

60.00	2.00	25.00	1.00	1.00
230.00	19.00	80.00	15.00	4.00
225.00	18.00	73.00	14.00	4.00
110.00	8.50	43.00	9.00	-0.50

Spearman Rank Correlation = 0.695

t-test value for hypothesis $r = 0$ is 4.103
Probability > t = 0.0007