**SPEARMAN RANK CORRELATION**

***WHY WOULD YOU CHOSE THIS TEST?:***

When looking for associations between different measurements from the same sample

***HOW?:***

1. Calculate the correlation coefficient using the table method:
2. Add the values into the table
3. Next to them rank from lowest to highest (if, for example, there are two 41’s and 41 is the first/lowest number, you do 2+1÷2 🡪 because its place 1 and place 2 and its divided because there’s two values)
4. Subtract the rankings from each other
5. Square the subtractions
6. Add up the values of the squares

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Value (X) found in experiment | rank | Value (Y) found in experiment | rank | D (subtract them) | D2 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  | ADD UP COLUMN |

1. Using the sum of the ‘D squared’ column, use the equation given to find Rs:

Rs = 1 – 6 x ‘Sum of D2’

n3 - n

Number of pairs in sample

1. Check the ‘critical value’ 🡪 this will be given in a table and just simply check the number next to the number of pairs you have in your sample

***CONCLUSIONS:***

* Rs **greater than** critical value = **reject** null hypothesis.

Less than or equal to a 5% (≤0.05) probability that the correlation in results occurred by chance

Greater than 95% (>0.95) probability that the correlation in results did not occur by chance.

* Rs **less than** critical value = **accept** null hypothesis

Less than or equal to a 95% probability that the correlation in results did not occur by chance (≤0.95)

Greater than a 5% probability (>0.05) that the correlation in results occurred by chance