Hypothesis Test for the PMCC

The Product Moment Correlation Coefficient calculates the strength of the linear correlation between two variables assuming that the sample it was calculated form was taken:

- Randomly
- Independently

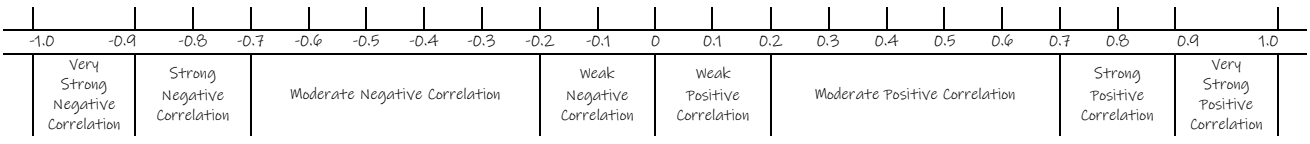
If our assumptions are correct, we can infer the results to the rest of the population.

A hypothesis test on our results allows us to determine if our calculated value for the PMCC is statistically viable.

For the purposes of the hypothesis test, let **ρ** (the Greek letter 'rho') represent the value of the PMCC

REMEMBER

- The value of the PMCC is a score between -1.0 and +1.0
- A negative value implies a negative correlation between the two variables
- A positive value implies a positive correlation between the two variables
- The closer the value is to zero, the weaker the correlation is



How to identify a PMCC Hypothesis Test:

✓ you are looking for a correlation between two variables
✓ the data is numerical and linear
✓ you may have been given the PMCC somewhere in the question

Important notation:

- **ρ** = 'rho' This Greek letter represents the 'correlation'

How to set out your answer

H_0	$\rho = 0$ (there is no correlation between X and Y)
H_1	$\rho > 0$ (there is a positive correlation between X and Y) $\rho < 0$ (there is a negative correlation between X and Y) $\rho \neq 0$ (there is a correlation between X and Y)

1 if > or < 2 if ≠	**tailed**

5% unless otherwise stated	**% significance level**

Test Statistic	The value of the PMCC

Critical Value	Taken from Table 8 in the formula booklet

Test Statistic	> or <	**Critical Value**
Hence we	Reject (if the TS lies in the CR)	H_0
Therefore there is		