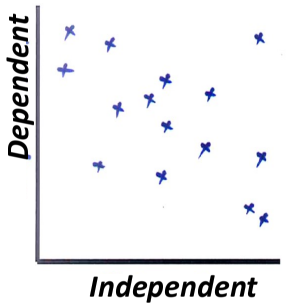
Cranedale Centre

CHOOSING THE RIGHT STATISTICAL TEST

Are you

Investigating the relationship between two continuous variables?

e.g. As the environment changes, does this affect the abundance of a species?



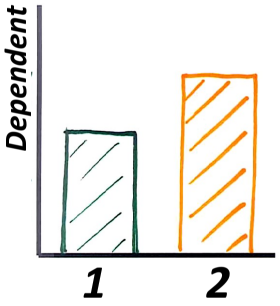
Spearman's Rank Correlation Coefficient

⊕ 10 pairs of readings are sufficient, though 20 sets of data are better.

⊖ S.R.C.C. misses non-linear relationships.

Looking for a difference between two averages?

e.g. Does area 1 have smaller values than area 2, on average?



Is your data normally distributed?

Yes → **T-Test**

⊕ 20 pairs of readings are sufficient, though 30 set of data are better.

⊖ T-test requires that each set of data shows a normal frequency distribution, or bell curve.

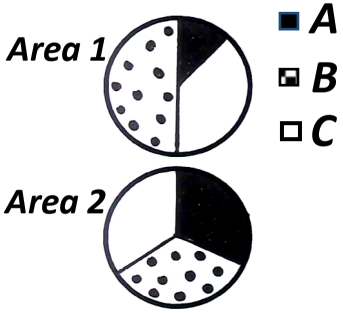
No → **Mann Whitney U Test**

⊕ There is no assumption of a normal distribution.

⊖ Is less accurate when the sample size is below 5 or above 20 pairs.

Looking for differences in proportions?

e.g. Are there different proportions of species A, B & C in two areas?



Chi Squared χ^2

⊕ χ^2 easily analyses counted animals from as few as one quadrat in each area.

⊖ The calculation requires 'expected values' to be greater than 5, which is difficult to work out during data collection.