



SPSS: MULTIPLE REGRESSION



MULTIPLE REGRESSION

- An extension of correlation when using **more than one IV**
- Assesses the combined association effect of IV's = multiple regression
- Explores **prediction** rather than relationships



MULTIPLE REGRESSION

- Three elements:
 - Predictors (IV's) treated as separate variables as well as a combined variable in relation to the DV
 - Assessment of how 'associated' they are as a whole
 - How 'predictive' they are of the DV as a whole
- Ideal for investigation of complex-real life research questions
 - Less used in lab-based experimental designs and far more applied designs
 - Ideal for longitudinal prospective designs

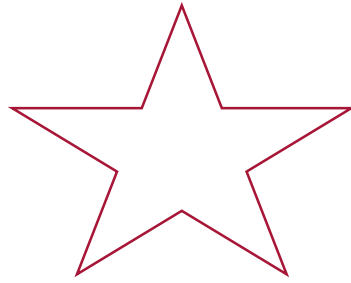


ASSUMPTIONS AND REQUIREMENTS FOR DATA

- MR is a fussy analysis! Makes many assumptions about data (and not all that forgiving if these are violated).
1. Continuous data is best (interval or ratio)
 2. Normal distribution of data (normality)
 3. Linear relationship between IV's and DV (linearity)
 4. Sample size is important!

ASSUMPTIONS AND REQUIREMENTS FOR DATA

5. Multi-collinearity
6. Singularity
7. Outliers
 - a) Very sensitive to outliers so always check during cleaning and screening
 - b) Standard residuals should not be below -3.3 / above 3.3
8. Homoscedasticity
 - a) Variances of errors the same across all IV's
 - b) Check using residuals scatterplot



STUDY EXAMPLE

- Predicting intentions to quit smoking using components of the Theory of Planned Behaviour (TPB)
- We need:
 - One continuous DV = Intentions
 - The three other components of TPB [Attitudes, Subjective Norm, Perceived Behavioural Control] as IV's.
- Note:
 - There are likely multiple things you need to do to/with data to get them to the point of being able to be analysed!