Advanced Research Methods Notes

Week 1:Introduction to Advanced Research Methods

How is this unit relevant?

- Psychology is evidence based; you need to be able to evaluate the evidence
- The interpretation of research must be viewed in light of the design and analysis
- Skills needed for you to design, use, and interpret your own surveys (in future study or practice)

Introduction to non-experimental (correlational) research

- Fundamental concepts
- Correlational designs
- Analysing correlational research
- Correlation, causation, and prediction

Fundamental concepts

Experimental designs:

- involve manipulation and control of factors to allow causal conclusions
- Characterised by:

    🖉controlled manipulation of IV to assess its impact on the DV

    🖉Random assignment

    🖉Control of extraneous variables

    🖉Theoretically strong causal explanation

✏It's not the statistics that are used that define it as experimental but rather the logic of the research design itself

✏Experimentation is not always possible due to reasons like when the Iv is a person variable like self esteem which cannot ethically be manipulated

Non-experimental designs：

- Measure variables of interest and ascertain relationships, which can be:

  ✏   Positive: variables covary together
  - As one gets larger so does the other
  - Ie age and wisdom
  - IQ and academic performance

  ✏Negative: variables covary in opposite directions
  - As one gets higher, the other gets lower
  - Increase in one leads to decrease in other
  - Ie alcohol and inhibition

  ✏   No relationship: variables covary independently

  ✏   Perfect: one variable predicts another with 100% accuracy

    - Ie amount of tickets sold at a theatre and number of people at the film

o Characterised by:

  - Correlational research design
  - Measuring participant on a variable of interest and seeing how they are related
  - Often called correlation designs

- Process of pattern detection
- Purpose of a correlation is prediction

Correlational designs

- These simple bivariate correlations (relationships between two variables) illustrate the concept, but we usually need to know the role of many variables together
- More complicated correlational designs employ partial relationships (that is, remove the part of the relationship that is related to some other factor/s)
    - E.g., you may think that IQ is important in predicting academic performance, but you would need to account for things like stress, coping, study habits, and interest in the topic
- We can hope to identify most important variables driven by theory, previous research and common sense