

Chapter 10: How to design a correlational study.

Full answers to study questions

1. Memory in older adults study:
 - 1.1. Memory and age: I would predict a negative relationship (as age increases, memory score decreases). Memory and IQ: Typically there is a positive correlation between IQ and memory, however both can change and reduce in later life, so this relationship might become weaker.
 - 1.2. Many, many variables could be suggested, the key thing is that they are continuous. For example, the personality trait of conscientiousness may be positively correlated with memory, whereas typical hours of sleep per night might be negatively correlated with memory.
2. Supplements and cognitive function study:
 - 2.1. The statement assumes that correlation implies causation!
 - 2.2. There would most likely be a positive correlation (as the number of supplements taken increases, cognitive ability increases).
 - 2.3. There are many possible confounds that you could suggest! For example, level of education might be a confound as people who are more highly education are likely to have better cognitive function. They may also be more likely to take supplements due to being more widely read and informed about nutrition.
3. Intelligence study:
 - 3.1. Again, there are many possible variables. Just make sure that they are continuous and that they show the three different kinds of relationship I specified. For example, intelligence may be positively correlated with socio-economic status, negatively correlated with religiosity, and not correlated with the number of cups of coffee drunk per week.
4. Childhood friendships study:
 - 4.1. Age of child: a continuous variables that is suitable for a correlation analysis.
 - 4.2. Being male or female: this is a binary categorical variable and cannot be included in a correlation analysis. An alternative could be to measure level of masculinity or femininity.
 - 4.3. Whether they are an only child or have siblings: Again, this is a binary variable so not suitable, but you could instead as for the number of siblings that they have.
 - 4.4. Type of club attended: This categorical variable has three categories and is not suitable for a correlation analysis. There isn't really an obvious alternative, so it would be interesting to hear what you came up with! Perhaps a personality questionnaire, looking at the trait extraversion?