

## Variables affecting research

**Independent variable:** This is the variable you alter or manipulate.

**Dependent variable:** This is the variable that alters as a result of what you do.

**Extraneous variables:** These are variables that affect your results or make the results difficult to interpret.

Examples include:

- time of day
- weather
- noise levels
- temperature
- intelligence of participants
- gender of participants
- personality of participants, etc.

Your investigation should include evidence of how you intend to minimise the effect of at least three extraneous variables.

An investigation should only have one independent variable.

## The research hypothesis

Your research hypothesis should be precise and linked to your independent and dependent variables.

Justify your hypothesis by referring to previous research or lack of any previous research.

Your justification will set the context for the investigation.

**Hint:** When writing your hypothesis, think about the type of data you will collect and how you could analyse it statistically.

## Sampling techniques

Choose and justify your choice of sampling technique.

Technique	Method	Advantages/disadvantages
Opportunity sampling	This samples people who are available at the time and fit the criteria.	Easy in terms of time and money. The sample could be biased and unrepresentative of the target population.
Self-selected sampling	Participants volunteer to take part.	Easy in terms of time and money. Can reach a wide variety of participants. Participants may not be representative of target population.
Random sampling	Every member of the population has an equal chance of being chosen.	This is the best technique for providing an unbiased representative sample of the target population. It's time consuming.
Stratified sampling	This involves classifying the population into categories, and then choosing a sample which includes individuals from each category in the same proportion as they are in the population.	The sample is representative of the population. It's time consuming as the categories must be identified and calculated.
Snowball sampling	This is used if the population is not easy to contact.	Easy in terms of time and money. May not be representative of the target population – bias.

## Research methods

Usually based on a questionnaire. Consider:

- whether the questions are open ended or closed, single or multiple response
- whether the data collected will be quantitative or qualitative
- how the data will be analysed e.g., drawing of graphs, using a named statistical test
- the validity and reliability of data.