

The basics, a key to help unlock the rest!

## Research Methods in Psychology 1



The **independent variable** is what researchers *manipulate* in order to test its effect on the dependent variable (the outcome).

The **dependent variable** is the outcome or effect we are measuring within the study.

An **extraneous variable** is a third variable that may unknowingly be affecting the DV. We conduct experiments to measure the effect of the IV on the DV but sometimes extraneous variables are actually the cause of the changes. They can be seen as “nuisance variables” e.g. the intelligence of participants; it may be that some participants in one group were more educated and therefore that group performed better at the task set.

**Null hypothesis:** a general statement that the observed variables will have **no impact** as there is no *relationship* between them.

**Hypothesis:** a formal and testable statement of the *relationship* between two variables that is to be tested through experimentation.

**Alternative hypothesis:** a prediction that one variable **will affect the other**. It does not specify the *direction* of the outcome, merely that there will be an effect.

### Standardised procedure and instructions

set of sequences which apply to all the *participants* when necessary to ensure the experiment is *unbiased*.

### Randomisation

Makes sure there are no *biases* in the procedures. You could pick words/numbers/names from a hat or use a random number generator.

### Independent groups

Participants only take part in one *condition*.

### Repeated measures

Participants take part in all *conditions*.

### Matched pairs

Participants *pre-tested* then paired up (on paper). One from each pair goes into each group.

**Ppts:**  
**abbreviation for**  
**participants**



	Description	Advantages/ strengths	Disadvantages/ weaknesses
<b>Laboratory experiment</b>	conducted in a controlled setting, usually a research lab where participants are aware of being observed and part of a study.	High internal validity. Limits <i>extraneous</i> variables, drawing cause and effect is more reliable.	Lacks <i>ecological validity</i> . Ppts may display demand characteristics.
<b>Field experiment</b>	conducted in a more natural environment, can be conducted anywhere in real-world settings with researchers <i>manipulating</i> an independent variable.	High in <i>ecological validity</i> ; natural behaviours from participants can be <i>generalised</i> to the wider population	Precise participants and the environment may be difficult to recreate. Informed consent <i>ethical</i> issues.
<b>Natural experiment</b>	conducted in a more natural or everyday environment, the independent variable occurs naturally (such as gender).	High in <i>ecological validity</i> ; natural behaviours from participants can be <i>generalised</i> to the wider population	Precise participants and the environment may be difficult to recreate. Informed consent <i>ethical</i> issues.

### Counterbalancing

Counteracts *order effects* in repeated measures designs. This could be from fatigue, boredom, or practice at the task.