

Measurement, methods, statistics and history

GRE Subject Test · GRE Psychology

Scope and prerequisites

GRE Psychology topic 6 (VI). Read MM.1, MM.2 and HT.1 for measurement, design and historical claims. The practice tasks below are original, not official ETS questions.

Concepts and method

reliability : Consistency of measurement. **validity** : Evidence for an intended measurement interpretation.

Reliability concerns consistency; validity concerns evidence supporting a particular interpretation or use.

Operational definitions specify how a construct is measured. A questionnaire label does not establish construct validity.

Random assignment improves comparisons; random sampling supports population generalisation. Ethics constrains both design and interpretation.

A p-value is a probability of data at least as incompatible under the null model, not the probability that the null is true. History questions distinguish explanatory schools and their methods.

Define a construct, state its observable measure, then ask whether the measure supports the intended interpretation. Random sampling concerns who enters a study; random assignment concerns which condition participants receive. A causal conclusion needs a credible comparison as well as measurement and ethical safeguards. Historical schools differ in the questions and methods they prioritize. See MM.1, MM.2 and HT.1 before using statistical or historical labels as explanations.

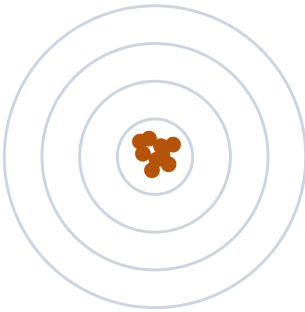
Worked reasoning

A memory test yields similar scores on repeated administrations but mostly measures reading skill. It may show test–retest reliability while lacking evidence for its intended memory interpretation. Establishing validity requires more than repeated agreement. Volunteers are randomly assigned to two memory tasks. Does this make the sample representative of all adults?

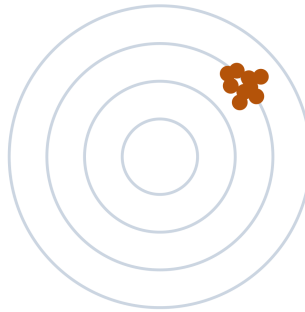
No. Assignment improves comparability of conditions within the recruited sample; it does not undo volunteer selection. Generalization requires attention to recruitment, eligibility and population differences. Describe random sampling and assignment separately.

Location and spread: a limited analogy

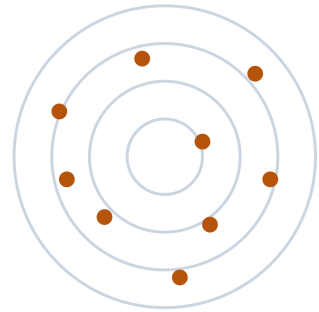
Tight
centred



Tight
shifted



Spread
out



Tight grouping is like reliability, being on target like validity: a test can be reliable but not valid

Independent transfer

A report finds $p=.03$ and concludes that its theory has a 97% probability of being true and a large effect. Correct both inferences.

Attempt independently, then use the matching skill sheet solution.

Review and source limits

Avoid this error: Statistical significance alone does not tell you effect size, practical value or absence of design bias.