



VALIDITY AND RELIABILITY

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VALIDITY

- Denotes the extent to which an instrument is measuring what it is supposed to measure.



CRITERION-RELATED VALIDITY

- A method for assessing the validity of an instrument by comparing its scores with another criterion known already to be a measure of the same trait or skill.



Criterion-related validity is usually expressed as a correlation between the test in question and the criterion measure. The correlation coefficient is referred to as a

VALIDITY COEFFICIENT



CONCURRENT VALIDITY

The extent to which a procedure correlates with the current behavior of subjects



PREDICTIVE VALIDITY

The extent to which
a procedure allows
accurate predictions
about a subject's
future behavior



CONTENT VALIDITY

Whether the individual items of a test represent what you actually want to assess



CONSTRUCT VALIDITY

The extent to which a test measures a theoretical construct or attribute.

CONSTRUCT

Abstract concepts such as intelligence, self-concept, motivation, aggression and creativity that can be observed by some type of instrument.



A test's construct validity is often assessed by its convergent and discriminant validity.



FACTORS AFFECTING VALIDITY

1. Test-related factors
2. The criterion to which you compare your instrument may not be well enough established
3. Intervening events
4. Reliability



Validity & Reliability

Validity: (Dictionary: founded in truth or fact)

The extent to which the measurement

ins “Are you measuring what you say you are measuring?” d to
measure

“Do you get the same measurement over and over?”

Reliability:

Index of consistency of measurement of the DV repeatedly proving the same score for a given participant

RELIABILITY

The consistency of measurements

A RELIABLE

TEST

Produces similar scores across various conditions and situations, including different evaluators and testing environments.



RELIABILITY COEFFICIENTS

- The statistic for expressing reliability.
- Expresses the degree of consistency in the measurement of test scores.
- Denoted by the letter r with two identical subscripts (r_{xx})



TEST-RETEST RELIABILITY

Suggests that subjects tend to obtain the same score when tested at different times.



SPLIT-HALF RELIABILITY

- Sometimes referred to as *internal consistency*
- Indicates that subjects' scores on some trials consistently match their scores on other trials



INTERRATER RELIABILITY

Involves having two raters independently observe and record specified behaviors, such as hitting, crying, yelling, and getting out of the seat, during the same time period

TARGET

BEHAVIOR

A specific behavior the observer is looking to record



ALTERNATE FORMS RELIABILITY

- Also known as *equivalent forms reliability* or *parallel forms reliability*
- Obtained by administering two equivalent tests to the same group of examinees
- Items are matched for difficulty on each test
- It is necessary that the time frame between giving the two forms be as short as possible



OBTAINED SCORE

- The score you get when you administer a test
- Consists of two parts: the *true score* and the *error score*

STANDARD ERROR OF MEASUREMENT (SEM)

Gives the margin or error that you should expect in an individual test score because of imperfect reliability of the test



EVALUATING THE RELIABILITY COEFFICIENTS

- The test manual should indicate why a certain type of reliability coefficient was reported.
- The manual should indicate the conditions under which the data were obtained
- The manual should indicate the important characteristics of the group used in gathering reliability information



FACTORS AFFECTING RELIABILITY

1. Test length
2. Test-retest interval
3. Variability of scores
4. Guessing
5. Variation within the test situation



RELIABILITY AND VALIDITY

- So why is reliability and validity so important?
- If research is going to be of any use, the results can't just be a fluke. We expect that if we repeated a study, we could get the same results.
- Research needs to be **reliable**.
- **RELIABLE: concerns the consistency of a measurement. Every time a thing is measured the result should be the same.**
- We also expect that the study actually represent what people do in their everyday lives, not just in a laboratory.
- Research needs to be **valid**.
- **VALIDITY: concerns whether a result is 'true'. Valid research represents something that is real. We want the study to represent everyday life.**



REMEMBER.....

- Sometimes you will ask, “Which is more important, reliability or validity?”
- There are two simple ways to answer this question:
 - • Simple answer #1: Validity is more important. If you are measuring the wrong thing, it doesn't matter how well you measure it.
 - • Simple answer #2: Reliability is more important. If the scores depend heavily on chance, you are not measuring anything.
- These two answers make it clear that there is really no way to decide whether reliability or validity is more important. Test scores cannot be valid for any purpose unless they are reliable.

