Validity and Reliability

EDP 612 Week 6

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Reliability and Validity

- **Reliability** and **Validity** are important concepts in both measurement and the full experiment to insure the link between our statistics and conclusions is sound.

Reliability

being consistent

Validity

on target

Reliability

- **Reliability** is the extent to which the measurements of a test remain consistent over repeated tests of the same subject under identical conditions.

  - *Officially*. An experiment is reliable if it yields consistent results of the same measure. It is unreliable if repeated measurements give different results.

  - *Lay terms* Results aren't just a one-off

  - *Day to day example*. A car

  - *Research world example*. Reliability of experiment, replication, and error rate

Validity

- **Validity** of a measure is the degree to which the variable measures what it is intended to measure

  - *Officially*. An experiment is valid if it yields outcomes suitable for answering original questions

  - *Lay terms*. Do the results answer what is supposed to be answered?

  - *Day to day example*. Medical results

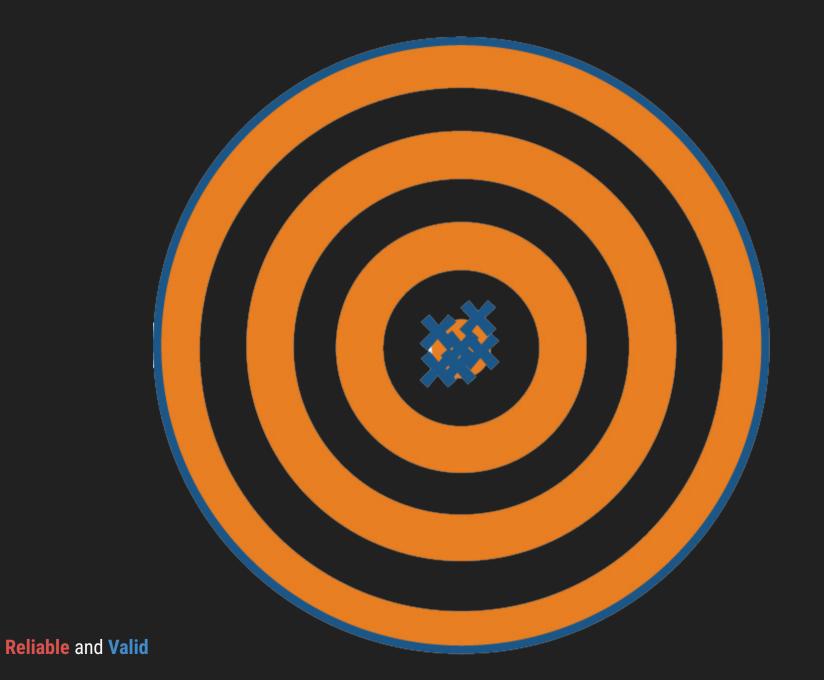 - *Research world example*. Validity of standardized test scores, research results and findings

No **Reliability** and Not **Valid**

Reliable but No **Validity**

Low **Reliability** and Possibly High **Validity**

Reliable and **Valid**

Two important points

A test can be **Reliable** without being **Valid**.

- A test cannot be **Valid** unless it is **Reliable**.

That's it!

Any questions?