Testing and Surveying

Todd Davies
Symsys 130
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Classical Test Theory – Key Ideas

Construct (e.g. intelligence, liberalism/conservatism)

Classical model: \( X = T + E \)

- \( X \) = Observed score on one question
- \( T \) = True score
- \( E \) = Error of measurement (+ or -)

Correlation, covariance

Reliability

Validity
Types of reliability

Repeated measures
- Parallel form method
- Test-retest method

One-time measure
- Split-half method
- Internal consistency (inter-item reliability)
Types of validity

Face validity

Construct validity
  - Convergent validity
  - Discriminant validity

Criterion validity
  - Predictive validity
  - Concurrent validity
Important points of CTT

Low reliability implies low validity
High reliability does not high validity
Reliability may be undermined by varied test conditions
Validity may be undermined either by error or by nonlinear relationships
Validity can be undermined by biased instruments
Example Test Construction Tasks

How “intelligent” is each person?
Who is likely to win the next Presidential election?
How happy are people in the U.S. versus those in France?
What is the racial composition of San Francisco?
How does media consumption predict political knowledge?
Do people like using Google Maps?