

# Testing and Surveying

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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?