

## Psyc 402 - Midterm 2 Study Guide

- 50 questions total, multiple choice
- Topics:
  - K04 - Reliability (12 questions)
  - K05 - Validity (14 questions)
  - K06 - Test Development (12 questions)
  - K07 - Test Administration (12 questions)

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## Reliability (Ch 4)

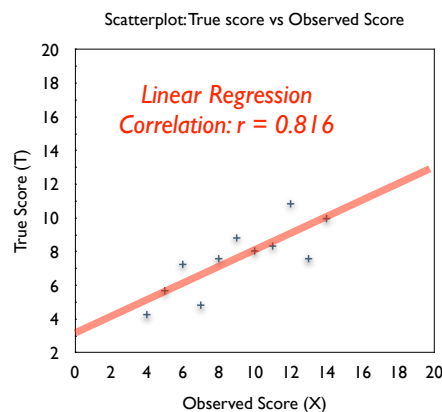
- Constructs, definitions and difficulties with
- Classical Test Score Theory
- 4 kinds of Reliability
- Common R values for reliability
- SEM and Confidence Intervals
- Increasing Reliability

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## Classical Test Score Theory

| X  | T     |
|----|-------|
| 10 | 8.04  |
| 8  | 7.58  |
| 13 | 7.58  |
| 9  | 8.81  |
| 11 | 8.33  |
| 14 | 9.96  |
| 6  | 7.24  |
| 4  | 4.26  |
| 12 | 10.84 |
| 7  | 4.82  |
| 5  | 5.68  |

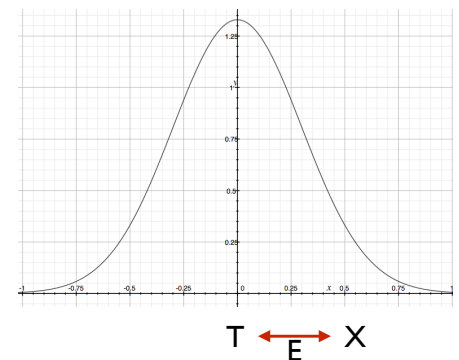


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## Classical Test-Score Theory

- $T$  = True Score
- $X$  = Observed
- $E$  = Error
- $X = T + E$
- $E = X - T$



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## 4 Kinds of Reliability

|                             | Description                  | Name                               | Statistic                                |
|-----------------------------|------------------------------|------------------------------------|------------------------------------------|
| <b>Time Sampling</b>        | 1 test given two times       | test-retest reliability            | correlation between scores at two times  |
| <b>Item Sampling</b>        | 2 different tests given once | Alternate or Parallel forms        | correlation between scores on 2 versions |
| <b>Internal Consistency</b> | One test, multiple items     | Split Half or internal reliability | Cronbach's Alpha                         |
| <b>Observer Differences</b> | One test w/ 2+ observers     | inter-observer reliability         | Kappa                                    |

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## Validity (Ch. 5)

- Griggs v. Duke Power, Ricci v. DeStefano
- History of Validity
- 4 kinds of Validity
- Common R and  $R^2$  values for validity
- Reliability and Validity

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## 4 Kinds of Validity

|                  | Description                               | Notes                                             | Statistic(s)                                         |
|------------------|-------------------------------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Face</b>      | do items "look" valid?                    | informal, improper, non-scientific                | none                                                 |
| <b>Content</b>   | do test questions cover the topic?        | logic & expert judgement                          | none                                                 |
| <b>Criterion</b> | does the test predict a specific outcome? | requires a well-defined criterion                 | Pearson's R (correlation) between Test and Criterion |
| <b>Construct</b> | does the test measure what it claims      | modern theory: all validity is Construct validity | Convergent and Divergent correlations (Pearson's R)  |

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## Test Development (Ch. 6)

- Definitions for several kinds of questions
- Pros & Cons of different kinds of questions
- Probability of Guessing
- Item Difficulty, Discriminability
- ICC
- IRT & Adaptive Testing

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## Test Administration (Ch. 7)

- Assumptions of Classical Test Score theory
- Bias
- Ways of administering tests / the protocol
- Bias / demographic variables
- Reducing bias
- Computerized assessment, issues with
- Polygraph exams
- Low Base Rate / False Positive Paradox

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