

# Alternate-Forms Reliability

Compare subject's answers to slightly different versions of survey questions. May reverse the order of the response choices in an index or modify the question wording in minor ways and then readminister that index to subjects. If the two sets of responses are not too different, alternate-forms reliability is established.

# Bogardus Social Distance Scale

Technique for determining the willingness of people to participate in social relations of varying degrees of closeness, with other kinds of people

# Concept

Summarize collections of seemingly related observations and experiences

An abstraction representing an object or property of an object

# Conceptual definitions

1. It must be inclusive of all cases covered by it and it should be exclusive of all cases not being denoted by it
2. It should not be circular, or not contain any part of the thing being defined-female as person with feminine qualities
3. should be stated positively –defining anomie as state that lacks meaning
4. should use clear terms- conservative means different things to different people

# Conceptualization

Process through which we specify what we mean when we use particular terms in research

Process of coming to agreement about what terms mean

Produces a specific agreed on meaning for a concept

# Construct Validity

Is based on the logical relationships among variables  
The degree to which a measure relates to other variables as expected within a system of theoretical relationships.  
Measure is related to a variety of other measures as specified in a theory  
How does variable relates to other variables

# Content Validity

The degree to which a measure covers the range of meanings included within a concept.

# Dimensions

A specifiable aspect of a concept

Religion has a belief dimension, ritual dimension,  
devotional dimension, knowledge dimension

Alienation –normlessness, meaninglessness, isolation

# External Validation

Process of testing the validity of a measure, index, scale by examining its relation to other presumed indicators of same variable

E.g. index of prejudice correlates with other indicators of prejudice

# Four Levels of Measurement

1. Nominal level-classification 2. ordinal level-rank values 3. interval level-say one object is greater than the other and by how many units the former is greater than the latter,e.g., height, temperature, time, income, intelligence quotient(IQ)

2. 4. ratio level-variables that have a natural zero point,an absolute zero point,e.g., weight, time, length must have equivalence, greater than, known distance of any two intervals, a true zero point

# Four scaling procedures focus on questionnaire

1. Bogardus Social Distance Scale-Emory Bogardus
2. Thurstone Scale-Louis Thurstone
3. Likert Scaling-Rensis Likert
4. Guttman Scaling-Louis Guttman and technique called Semantic Differential used in questionnaires

# Functions of concepts

1. The foundation of communication
2. Introduce a point of view, a way of looking at world
3. They are means for classification and generalization- categorize, structure, order
4. They serve as components of theories and of explanation and prediction-define and shape content of theory

# Guttman Scale

Type of composite measure

Based on the fact that some items may prove to be more extreme indicators of the variable than others

It is unidimensional and cumulative

Items are unidimensionally ranked on a single underlying dimension

Scale is cumulative in that information on the position of any respondent's last positive response allows the prediction of all his or her other responses to the items

Anyone who gives a strong indicator of some variable will also give the weaker indicator

# Index

Type of composite measure that summarized and rank-orders several specific observations

Counts the number of indicators of the variable

# Index and scale

Index construction and scaling

Measuring instruments for complex concepts

Composite measures combination of two or more items or indicators

Enable several variables represented by a single score

Provide quantitative measures amenable to statistical manipulation and greater precision

increase the reliability of measurement

# Index and Scale

Scales have greater rigor in construction

Indexes are constructed by simple accumulation of scores

Scales pay greater attention to tests of validity and reliability

Most scale involve the underlying principle of unidimensionality-items comprising scale represent a single dimension

# Index Construction

## Four main steps

1. Select items-face validity/unidimensionality
2. examine empirical relationship-bivariate relationship-relationship between 2 variables, multivariate relationships-relation between 2 or more variables if two items perfectly related to each other only one needs to be included in index
3. scoring- adding or averaging score
4. validating –item analysis

# Indicator

Is the sign of the presence or absence of the  
concept being studied

Poverty has two dimensions-subjective and  
absolute

# Interitem Reliability-internal consistency

When use multiple items to measure a concept.  
Cronbach's Alpha is a statistic commonly used to measure interitem reliability or internal consistency

# Interobserver Reliability

When researchers use more than one observer to rate the same people, events or places. If observers are using the same instrument to rate the same things, their ratings should be very similar.

# Item Analysis

An assessment of whether each of the items included in a composite measure makes an independent contribution or merely duplicates the contribution of other items

Internal validation measure

# Likert scale

Technique of summated rating

Type of composite measure to determine the relative intensity of different items

Unambiguous ordinality of response categories

Use response categories of strongly agree, agree, disagree, strongly disagree

# Operational definition

Is a set of procedures that describes the activities one should perform in order to establish empirically the existence or degree of existence of a phenomenon described by a concept

Specifies precisely how a concept will be measured

Tell what to do and what to observe

Bridge the conceptual-theoretical level with the empirical- observational level.

# Operationalization

The process of connecting concepts to observations

Identify specific observations that we will take to indicate that concept in empirical reality

The empirical counterpart to conceptualization-  
meaning of terms

# Panel study/fixed –sample panel

Data are collected from the same individuals, the panel, at two or more points in time. Problems: expensive-difficult and expensive, attrition-those lost before follow up, subject fatigue-grow weary and drop out or give stock answers-not thinking

# Paradigm

A model or frame of reference  
Used to organize observations and  
reasoning

# Parallel-Forms Reliability

Requires two forms of a measuring instrument that are parallel, the two forms are then administered to a group of persons, and the two sets of measures are correlated to obtain an estimate of reliability

Have to determine if the two forms are in fact parallel

Evaluation is judgmental basis

# Positive relation

Means that as values of one variable increases, values of the other also increases

# Relation

Variable X and Y are related means there is something common to both variables, they go together or they covary.

# Relation between validity and reliability

1. Reliability is a prerequisite for measurement validity.
2. A reliable measure is not necessarily a valid measure. 3. Many measures are judged to be worthwhile on the basis of a reliability test.
4. Conduct a pretest in which you use the measure with a small sample and check its reliability.  
5. Use measures that have been used before whose reliability and validity have been established in other contexts
6. Even with tried and true measures, test the reliability and validity of the measure in your own study.

# Reliability

Is a matter of whether a particular technique, applied repeatedly to the same object, yields the same results each time

Each measurement consists of two components a true component and an error component

Reliability is defined as the ratio of true score variance to observed-score variance

# Research Design

Is a blueprint for research

A plan for collecting, analyzing and interpreting data that allows the investigator to make causal inferences

Process for deciding what aspects we'll observe, of whom, for what purpose

# Research designs are

Cross-sectional design— a study in which data are collected at only one point in time or longitudinal design—research in which data are collected at two or more points in time, data can be ordered in time

# Semantic Differential

A questionnaire format in which the respondent is asked to rate something in terms of two opposite adjectives using qualifiers such as very, some what to bridge the distance between the two opposites

Determine the dimension along which subjects judge then find 2 opposite terms representing the polar extremes along each dimension, e.g. enjoyable unenjoyable, somewhat very much

Prepare a rating sheet for each person

# Specification

Process through which concepts are made  
more specific

Religiosity is frequency of attending religious  
service

# Split-Half Method of Reliability

Estimates reliability by treating each of two or more parts of a measuring instrument as a separate scale. In a questionnaire the odd-numbered questions for one set and even-numbered questions for the other set. Each of the two sets of questions is treated separately and scored accordingly. The two sets are then correlated, and this is taken as an estimate of reliability. Spearman-Brown prophecy formula is applied to correct correlation coefficient

$r =$

# Test-retest Reliability

Make the same measurement more than once

A measuring instrument is administered to the same group of persons at two different times and the correlation between the two sets of observations is computed. The obtained coefficient is the reliability estimate

$r =$

There is an analytical  
distinction between

Independent variable, dependent  
variable, control variable, continuous  
variable and discrete variable

# Three Major Ways of estimating reliability

1. test-retest method
2. parallel forms  
technique
3. split-half method

# Three types of longitudinal designs

1. trend study or repeated cross-sectional design
2. panel study- fixed sample panel design
3. cohort study- event-based design

# Thurstone Scale

Type of composite measure constructed in accord with the weights assigned by 10 to 15 judges to various indicators of some variable

Problem is time, effort and cost of judges

# Trend or repeated cross-sectional design

Data are collected at two or more points in time from different samples of same population

Specific set of people studied would differ, determine whether a population has changed over time

# Two approaches to Construct Validation

1. Convergent validity-when one measure of a concept is associated with different types of measures of the same concept 2. Discriminant validity-measure to be validated is not associated strongly with the measure of different concepts

Method of construct validation involving correlation matrices is the multitrait-multimethod technique-given property, different instrument, different properties similar instruments

# Two methods of developing theory

1. Deductive theorizing- move from general to specific, hypotheses testing,
2. Inductive theorizing-move from particular to the general, leads to grounded theory, theory is grounded in sense it was generated from data

# Two properties of relations

Direction –positive or negative and  
magnitude-perfect relation or zero relation

# Two technical considerations in the evaluation of measurement

1. Reliability(repeatability, consistency)
- and 2. validity(accurate reflection)

# Two types of content validity

1. Face validity 2. sampling validity

Face validity-rests on the researcher's subjective evaluation ,extent to which it measures what it appears to measure according to subjective assessment

Sampling validity-whether a given population of situations or behavior is adequately sampled by the measuring instrument,does the content instrument adequately represent the content population?

# Two types of definitions are important in research

1. Conceptual definition or conceptualization
2. operational definition or operationalization

# Types of Units of Analysis

1. individuals- most common in social research- college students
2. groups- families ,sororities
3. organizations-corporations, universities
4. social interaction-compare length of chat room interaction
5. social artifact-children picture books, paintings, newspaper editorials

# Typology

Summarizes the intersection of two or more variables, creating a set of categories or types

# Units of Analysis

The level of social life on which a research question is focused

The thing whose characteristics we are seeking to describe or explain

What or whom can be studied

# Units of analysis and Causal Conclusions

1. Ecological fallacy- an error in reasoning in which incorrect conclusions about individual – level processes are drawn from group- level data,inferences about properties of persons made on basis of groups
2. Reductionist fallacy or individualist fallacy- error in reasoning that occurs when incorrect conclusions about group-level processes are based on individual-level data,we draw conclusions about behavior of groups or aggregates on basis of data on individual persons

# Validity

Concerned with the question, "Is one measuring what one thinks one is measuring?"

The extent to which an empirical measure adequately reflects the real meaning of the concept under consideration

We are actually measuring what we say we are measuring