

# Measurement

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# Overview

- 1 Housekeeping
- 2 Recap
- 3 Types of Measures
- 4 Measurement Standards

- Homework 2 will be posted to the website today and is **due March 5**
- Our next in-class group meeting (literature review) takes place March 14. I will send out the prompt/rubric before Monday morning's class next week
- Grades for homework 1 have been posted to blackboard

# Paragraphs of Text

- Conceptualize
- Operationalize
- **Measure**

# Types of Measures

- Ordinal
- Interval
- Ratio
- Nominal
- Binary
- Continuous vs Discrete

# Example: Poverty

## Ordinal

Measure: "Lower Class", "Middle Class", "Upper Class"

## Ratio

Measure: Annual income in dollars

## Interval

Measure: Percent of individuals living below the poverty line

## Nominal

Measure: "Rural poverty", "urban poverty"

# Comparison of Measurements

**Exhibit 4.13** Properties of Measurement Levels

Examples of Comparison Statements	Appropriate Math Operations	Relevant Level of Measurement			
		Nominal	Ordinal	Interval	Ratio
A is equal to (not equal to) B	= ( $\neq$ )	✓	✓	✓	✓
A is greater than (less than) B	> (<)		✓	✓	✓
A is three more than (less than) B	+ (-)			✓	✓
A is twice (half) as large as B	$\times$ (+)				✓

# Comparison of Measurements

<b>Provides:</b>	<b>Nominal</b>	<b>Ordinal</b>	<b>Interval</b>	<b>Ratio</b>
The "order" of values is known		✓	✓	✓
"Counts," aka "Frequency of Distribution"	✓	✓	✓	✓
Mode	✓	✓	✓	✓
Median		✓	✓	✓
Mean			✓	✓
Can quantify the difference between each value			✓	✓
Can add or subtract values			✓	✓
Can multiple and divide values				✓
Has "true zero"				✓



- Reliability

- A measure is said to have a high reliability if it produces similar results under consistent conditions.
- Reliability does not imply validity.
- A reliable measure that is measuring something consistently is not necessarily measuring what you want to be measured

- Validity

- The extent to which measures indicate what they are intended to measure.
- Face Validity
- Content Validity

# Reliability vs. Validity

