

POLS201 Spring 2019

Levels of Measurement

February 20

Today's Agenda

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- Homework, levels, weights
- We will revisit levels soon but here's an intro

What are the levels of measurement?

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- How is a particular measure scaled?
- Possibilities:

Nominal / Categorical Measures

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- You can put cases into a category, but cannot specify an order or relationship between the categories.
 - Example: The variable “religion” can take on values such as Catholic, Protestant, Mormon, Jewish, etc.

Dummy Variables

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- “Dummy” or “Dichotomous” variables are a special case of a categorical variable.
- Only Two Categories
 - Code as zero and one in your data, or perhaps TRUE or FALSE

Ordinal Measures

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- You can put cases into different categories, and order the categories.
- Example: The variable *strength of religious belief* can take on values such as devoutly religious, fairly religious, slightly religious, not religious.

Continuous Measures

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- The measure has a natural order and achieves equal unit difference
- Equal Unit Difference: A one-unit increase in the variable always means the same thing
- Example: The variable number of times attend church per year could take on the value of 0, 2, 52, or 104

Continuous Measures

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- Two Types:
- *Interval*: Zero is, essentially, arbitrary
 - Though it may have some historical meaning
- *Ratio*: Zero has meaning, and zero implies the absence of a variable.
 - Which means the ratio also has meaning
- Most continuous measures you encounter will be ratio-level.
- Two Exceptions: Calendar years, Temperature in Celsius and Fahrenheit

Characteristics of four levels of measurement:

Level	are names	have an inherent order from more to less or higher to lower	are numbers with equal intervals between them	are numbers that have a theoretical zero point
Nominal level	X			
Ordinal level	X	X		
Interval level	X	X	X	
Ratio level	X	X	X	X

Examples: What are these?

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- Years of Schooling: 0-20
- Level of Schooling: primary, secondary, some college, college, graduate.
- Type of Graduate Program: Masters, PhD, Law School, Med School

Examples: What are these?

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- Likert Scales: Disagree Strongly, Disagree Somewhat, Neither Agree nor Disagree. . .
- Democracy: Freedom House Scores, 1-7