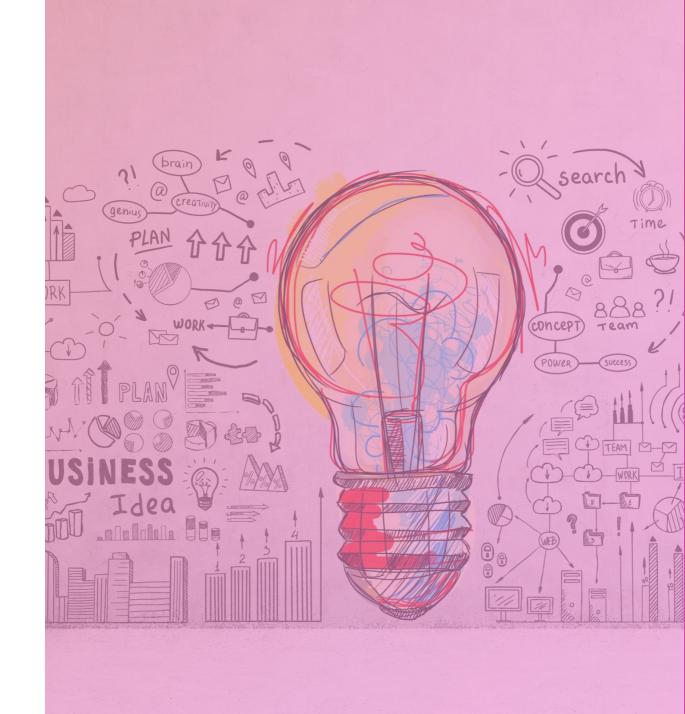
March 30, 2022 Austin G. Oswald

# Quantitative Research Refresher



# Agenda

- Check in
- Discussion of readings
- Small group work



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Paradigms

**Positivist** Pragmatic Postpositivist **Paradigms** Critical Interpretive

What does Guo (2015) say about quantitative social work paradigms?

## Deductive analysis

Theory

Develop Hypotheses Operationalize Concepts

Test Theory

## Some variables defined

Variable	Definition
Categorical	Contains a finite number of categories or distinct groups
Continuous	Contains an infinite number of values between any two values
Independent (predictor)	The value of this variable does NOT depend on the cause
Dependent (outcome)	The value of this variable depends on the cause
Confounding	Extraneous factor influencing both the cause (predictor) and effect (outcome)

### Levels of measurement

Nominal, Ordinal, Interval, and Ratio

Least Precise Most Precise

## Nominal variable



A variable that numerically expresses qualitative values representing different categories.

#### **Categorical variable**

- Discrete variable (countable in a finite number of categories)
  - Gender (Cisgender male, cisgender female, transgender, nonbinary...)
- Binary variables or dichotomous variables
  - Cat/Dog Pass/Fail -Depressed/Not Depressed



# Ordinal variable

#### **Categorical variable**

- Has an order (without knowing the exact differences between points on a scale)
- Examples:
  - Rank order in a race (1st, 2nd, 3rd-doesn't give us the time difference)
  - Education level (high school, 2-year degree, 4-year degree, graduate degree)



## Interval variable

#### **Continuous variable**

- Can take on any value between two points, but doesn't have a true meaningful zero
- Equal intervals on the scale MUST represent equal differences in the property being measured
  - Examples: temperature, IQ test, measuring income as a range

## Ratio variable

#### **Continuous variable**

- Can take on any value between two points
- Equal distance between interval variables but <u>has a</u> true meaningful zero point.
  - Examples: weight, pulse, monthly income



## Some quantitative terminology

- Hypothesis
- Randomization
- Generalization
- Validity
- Reliability
- Measurement error
- Cause and effect, between subject, within subject designs



## Writing clear questions

Things to avoid	<b>Example</b>
Confusing phrasing	The Moon may be a place for an eventual scientific base, and even for engineering resources. Setting up a base or mining experiment will cost tens of bullions of dollars in the next century. Should the US pursue further manned and unmanned scientific research projects on the surface of the moon?
Vagueness	Residential location: How many times in the past year have you talked with a doctor?
Double negatives	Do you disagree that juveniles should not be tired as adults if they commit murder?
Double barreled questions	Do you support increased spending on social services and schools?
Jargon	"comorbid" "ACE" "social justice" "heteronormativity"
Leading questions	How well did our services meet your needs?

## Class activity

In small groups, review and discuss the class survey in relation to our larger class project on the social work internship experience. What suggestions do you have to improve the survey (what questions would you add, change, or remove) to meet our pragmatic goals for this research?

**RQ1:** What is the subjective experience and consequences of an unpaid or underpaid social work internship?

**RQ2:** What structural factors contribute to this version of social work education?

**RQ3:** What else might be possible for social work field education?