

Analyzing Quantitative Data

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Community Psychology

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Announcements

- ❖ Assignment 4 grading on-going
- ❖ Assignment 5 optional
- ❖ Final Due May 19th (24hr grace, no-redos, no extensions)

Discussion Question

Discuss or Debate the following statement

“The U.S. Census is an amazing and necessary tool. Analyzing data from the census allows us to get a better understanding who is living here in the U.S. and what resources/support they might need”

4 Categories of Quantitative Data

Nominal

Ex: Religion,
Gender, Race

Ordinal

Ex: SES,
Likert Scales

Interval

Ex: IQ, 12hr
clock time,
Temperature

Ratio

Ex: Weight,
Height,
Income
earned

4 levels of analyzing data

Data tabulation (Frequency distributions)



Descriptives (Mean, Median, Mode, Min/Max)



Disaggregate (Exploratory comparisons)



Moderate to Advanced Analysis (Correlation, Regression, ANOVA)

Data Tabulation

- Frequency Distributions & Percent Distributions
 - Can be used to say things like: “800 participants identified outside of the gender binary” and “Over 50% of participants in the sample community were very satisfied with the effectiveness of our intervention”
- Helps to determine:
 - If scores are entered correctly
 - The count of each category
 - The spread of the scores
- Important to do all data tabulation first in order to work with the data more easily.

Say something about this Data

You're trying to understand the dating habits of a community of self-identified "hopeless romantics" who range from 18-35 years old. You ask the question "How likely is it that you will continue dating someone who says they are polyamorous?" and receive the following responses.

Very Unlikely	Unlikely	Neutral/ Don't know	Likely	Very Likely
200	50	30	10	10
67%	17%	10%	3%	3%

What is something you could say about this data using this data tabulation?

Descriptive

- Using various methods to further “describe” the data
- Mean, median, mode, min/max
- Means can only be used with interval and ratio
- Medians can only be used with ordinal, interval and ratio
- Mode and Min/Max can be used at any level
- Can be used to say things like: “The average age of our sample was 25. With the eldest being 38 and youngest being 18” and “Most participants stated they were dissatisfied with their community leaders.”

Say something about this data

You're trying to understand the dating habits of a community of self-identified "hopeless romantics" who range from 18-35 years old. You asked folks "In months, how long was your longest relationship?" and describe the responses using mean, median, mode, min, & max

Mean	Median	Mode	Min	Max
7 months	13 months	12 months	0 months	24 months

What is something you could say about this data using any of these descriptives?

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- ❖ Assignment 5 optional
- ❖ Final Due May 19th (24hr grace, no-redos, no extensions)
- ❖ Just 3 more classes after this!

Discussion Question


Now that you've had a bit of practice saying things with quantitative data and felt some of those tensions. What are some things you need to be mindful of when reading quantitative studies? Or doing quantitative research yourself?

4 levels of analyzing data

Data tabulation (Frequency distributions)



Descriptives (Mean, Median, Mode, Min/Max)



Disaggregate (Exploratory comparisons)



Moderate to Advanced Analysis (Correlation, Regression, ANOVA)

Disaggregating

- To separate data into its component parts to compare
- Looking more closely at your various categories so that you can compare them to one another
- Good for finding gender, race, class, etc differences in the sample but also great when wanting to compare factors/variables
- Necessary for seeing if your sample is representative and if your groups are comparable
- Can be used to say things like: “40% of participants in Harlem had or were experiencing homelessness compared to 24% in Brooklyn” And “5% of men sought help after experiencing violence compared to 65% of women”

Say something about this data

You're trying to understand the dating habits of a community of self-identified "hopeless romantics" who range from 18-35 years old. You asked participants "Do you believe in the concept of "soulmates?" You decided to compare the responses based on participant responses to the question "Which indicates the status of your parents' relationship?"

Do you believe in soulmates?	Parent(s) deceased/ unknown (50)	Parents Divorced (100)	Parents Together unmarried (30)	Parents together married (120)
Yes	4%	43%	100%	70%
No	90%	50%	0%	10%
Unsure	6%	7%	0%	20%

What is something you could say about this data using this disaggregation?

Moderate to Advanced Stats

- Correlation: Describing the nature of the relationship between two variables
 - "Participants who participated in community protests were more likely to state that they were dissatisfied with community leaders"
- Regression: A more advanced form of correlation used to determine if one variable is a predictor of another
 - "Attending a community board meeting was a predictor for participating in community protests and dissatisfaction with community leaders."
- Analysis of Variance (ANOVA): Used to determine if the difference between group means is significant
 - "The difference in dissatisfaction with community leaders between those who attended community board meetings and those who hadn't was significant"

Saying something interesting

- RQ: How does a diverse group of young adults (18-25) in NYC feel about increased NYPD presence within the MTA?
- Methods Used: Online survey
- In small groups think about what kinds of questions might've be on the survey.
- Think about whether these questions (and the variables associated with them) represent Nominal, Ordinal, Interval, or Ratio data.
- Finally talk about how you might Tabulate, Describe, Disaggregate, and use statistics to say something about this issue.

Longer Analyzing Quantitative Data Practice

Understanding Quantitative Data

Choose one of the following research questions:

- What are some important generational factors that influence the animosity between Baby Boomers and Gen Z?
- What influence does participation in activism have on college students mental health and quality of life?
- What factors influence formerly incarcerated folks access to the job market?

Define your study

- Develop a hypothesis based on your RQ
- Define your community/ communities
- Define your variables (Nominal, Ordinal, Interval, ratio?)(what are you measuring?)
- Define your methods (How are you measuring it?)
- Think about how you want to involve the community
- What important perspectives and potential biases are present in your research team?

Data Tabulation

- Imagine that you conducted the research and gathered all your data. Now it is time to clean and tabulate your data
- In the process of cleaning your team discovers that the majority of participants did not answer a question. Decide how to deal with this.
- Based on your variables imagine some numbers you might expect to see. How many people in the sample, and all the ways this breaks down by demographic, and measure. (These can be in line with your hypothesis or not)
- Write a statement that describes these numbers.

Describing the Data

- Think about some descriptive things you might want to discuss (mean, median, mode, min/max)
- Again decide what some of these numbers might be.
 - Think about what measures might need to be averaged
 - Think about what various modes can tell you,
 - How might informing folks of the range help answer your question or substantiate your findings.
- Write a brief statement that details some of your descriptive numbers.

Disaggregating Data

- Based on the numbers you have now separate compare your groups.
- Think back to your research question as well as your hypothesis in order to make some comparisons
- Do your variables differ along measure lines or along demographic lines?
- What are some important differences that you might be seeing?
- Write a brief statement that describes some of your comparisons.

Put it all together

- Use the statements that you have in order to put together a short preliminary methods and results section of a paper.
- State your research question and hypothesis
- The variables (factors) you chose
- What methods you used
- Why you decided to use them
- Data Tabulation statement(s)
- Descriptive statement(s)
- Disaggregate statement(s)
- Ask one person to read this aloud