



# Analyzing Assessment Data

Office of the Vice President for Student Life  
The University of Iowa



# Outline

- Analyzing Data
  - Qualitative data
  - Quantitative data
  - Making sense of data
- Qualtrics
- SPSS

# Learning Outcomes

**At the end of the workshop you will be able to...**

- Describe the process of analyzing qualitative and quantitative data.
- Explain the basic and advanced features of Qualtrics.
- Discuss SPSS basics.

# Examples of Data

- Responses to a survey that asks students to rate their level of agreement (1=Strongly Disagree, 5=Strongly Agree) with the following statement: *I have confidence in my ability to develop relationships with others who are different from me.*
- Responses to a survey that asks students to define leadership in their own words.

# Examples of Data

- A pile of rubrics that rate students ability to state two barriers to physical activity after a fitness consultation

	Does not Meet	Meets
Student can state two barriers to physical activity	Cannot state two barriers to physical activity	Can state two barriers to physical activity

- Notes and recordings from a focus group in which students responded to the following question: *Based on your experience as an official, what do you consider to be the key components of effective communication?*

# Approach to analysis depends on the nature of the data

- Qualitative data
  - Describes things in terms of categorizations or qualities
  - Examples:
    - Responses to a survey that asks students to define leadership in their own words.
    - Notes and recordings from a focus group in which students responded to the following questions...
- Quantitative data
  - Can be counted or expressed numerically
  - Examples:
    - Responses to a survey that asks students to rate their level of agreement (1=Strongly Disagree, 5=Strongly Agree) with the following statement...
    - A pile of rubrics that rate students on their understanding of the importance of physical activity

	Qualitative	Quantitative
Overarching concepts	Making meaning Gain insights into phenomena	Explain & predict Identifying statistical relationships Standardization Generalization Confirming predictions
Location	“wherever we need to be”	Standardized, controlled
Hypothesis	Evolving, tentative	Specific, testable, Committed prior to the study
Data	Words, pictures, documents, observations	Numbers Measures Predetermined instruments
Analysis	Messy Difficult to reduce Inductive	Precise Objective Deductive

	Qualitative	Quantitative
Sampling	Purposeful Transferable Numbers not important	Drawn from the “population” so that generalizability is possible
Role of the “researcher”	Instrument & interpreter Personal contact is likely Neutrality is the goal	Removed from the data and the participant



# Qualitative Data Analysis

- **The process:**
  - Organize the data
  - Give the data a “once-over,” noting initial impressions
  - Categorize the data
    - You can (a) determine the categories ahead of time, (b) allow the categories to emerge from the data, or (c) do both
    - You may end up with “categories of categories” (i.e. categories and subcategories)
    - This is an iterative process

# Qualitative Data Analysis

- **The process (continued):**
  - Determine the relative significance of each category by counting the number of times it occurs
  - Note responses that do not fit into the categories
  - Find compelling quotes to include in your assessment report
  - Take a step back
    - What do the data tell you about your assessment question?
    - What are the limitations?
    - What are the implications? Does it lead you to make changes or confirm your approach (or both)?
    - What, if anything, will you change about the assessment process?

## What is one thing you learned from the Excel session?

To go to my professor's office hours

Just to go to class and to pay attention to do well in school.

Talking to professors

Some of the ways to do well in my classes.

I learned about asking questions, and going to office hours

Semester-hour expectations for each semester and graduation

You need to go to lecture halls!

to pay attention in lecture.

Some expectations of the college learning environment.

how to be a good student

Be where you need to be and when you need to be there

The online classes you can take

to do my best

Don't be afraid to talk to your professors.

Go to classes/office hours.

It is important to go above and beyond

Can't remember

What is one thing you learned from the Excel session?

Themes	Percentages (of 543)
Academic skills	29%
Nothing/Don't remember	22%
Professors/TAs (office hours, get to know them)	11%
Other	9%
Expectations (class, academics, professors)	8%
Responsibility/Balance	7%
Time-management	5%
Excel/Challenge yourself/Set goals	5%
College versus High School	2%
Credit requirements/Grading	2%

# Qualitative Data Analysis

- *“Data analysis is the process of bringing order, structure, and meaning to the mass of collected data. It is a messy, ambiguous, time-consuming, creative, and fascinating process. It does not proceed in linear fashion; it is not neat. Qualitative data analysis is a search for general statements about relationships among categories of data” (Marshall & Rossman, 1999; as cited in Elkins, 2009).*

# Quantitative Data Analysis

- **The process:**
  - Organize the data
  - Give the data a “once-over,” noting initial impressions
  - Four analytic strategies
    - Description (frequencies, percentages, mean, median, mode, range, standard deviation)
    - Differences (participants vs. non-participants; do certain participants do better than others?)
    - Change (pre/post)
    - Expectations (do students meet our expectations of learning/competency)

# Quantitative Data Analysis

- **The process (continued):**
  - Alone, neither measures of central tendency (e.g. mean, median, mode) nor measures of variability (e.g. range, standard deviation) tell the whole story
    - Consider:
      - Group 1 scores: 190, 195, 199, 200, 200, 201, 205, 210
      - Group 2 scores: 0, 10, 20, 200, 200, 380, 390, 400
      - Scores from Group 1 and Group 2 have the same central tendency but different variability
  - Just reporting the mean can be misleading. For example, average salary of State of Iowa employees is \$51,000. What role might Kirk Ferentz's salary play in this figure? Consider how having the median and more might be more helpful.



# Quantitative Data Analysis

- **The process (continued):**
  - Conduct other *useful* calculations (e.g. sum, percentages)
  - Take a step back
    - What do the data tell you about your assessment question (What?)
    - What are its implications for policy and/or practice (So What?)
    - What, if anything, will you change about the program or process (Now What?)
  - Other considerations
    - Use online survey design software (e.g. Qualtrics), Microsoft Excel, or SPSS to make calculations
    - For help with statistical analysis (e.g. statistical significance, confidence intervals, etc.) see Sarah, Teri, or another statistics helper!



## How effective was the Excel lecture at:

Item	% responding very ineffective or ineffective	% responding somewhat ineffective or somewhat effective	% responding effective or very effective	Mean response (1=very ineffective to 6=very effective)
Outlining the expectations for academics?	16%	44%	40%	4.0
Giving you useful information about succeeding in classes?	16%	44%	40%	4.0

# Qualtrics

- “Qualtrics is a secure, online data collection service provided by ITS at the University of Iowa. This service is available to The University of Iowa faculty, staff and students at no cost.”
- Website: <https://uiowa.qualtrics.com>
- Your account: Hawk ID and Password
  - Sign in to authenticate
- Qualtrics help:
  - Online resource: <http://www.qualtrics.com/university/researchsuite/>.
  - Daily training sessions: <http://www.qualtrics.com/training>.
  - Customized training sessions: [training@qualtrics.com](mailto:training@qualtrics.com)

# Qualtrics

- Create a new survey
- Task icons
- Add questions
  - Choose question type (multiple choice, matrix, text, etc.)
  - Edit questions
- Blocks
- Display and skip logic

# Qualtrics

- Preview Survey
- Panels
- Distribute survey
- View results
  - Responses
  - Download Data
  - View Reports

# SPSS

- Statistical software program
- Virtual Desktop Service at UI:  
<https://virtualdesktop.uiowa.edu/Citrix/VirtualDesktop/auth/login.aspx>
- Sign in with Hawk ID and Password
- Search for SPSS

# SPSS

- Getting Started
- SPSS Environment
- Saving/Opening
- Descriptive Statistics
- Inferential Statistics

# Resources

- Individual consultations
- Division of Student Life: Student Learning and Assessment website
  - <http://studentlife.uiowa.edu/assessment/>
- Available Publications page
  - UI Assessment Handbook
  - One Page Information Sheets
  - Books and Journals
  - <http://studentlife.uiowa.edu/assessment/tools-for-assessment/available-publications/>

## Resources

- Qualtrics Survey Software: Handbook for Research Professionals
  - <http://cloudfront.qualtrics.com/q1/wp-content/uploads/2012/02/QualtricsSurveySoftware.pdf>
- Statistics Outreach Center: Short Courses
  - [http://www.education.uiowa.edu/centers/docs/soc-docs/SOC\\_SPSS\\_Short\\_Course\\_F11.pdf?sfvrsn=0](http://www.education.uiowa.edu/centers/docs/soc-docs/SOC_SPSS_Short_Course_F11.pdf?sfvrsn=0)



# Questions?

