Introduction to SPSS

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What we'll be covering

- Opening SPSS
- Loading and Saving Data
- Data vs Variable View
- Frequency Tables
- Checking over Data
- Crosstabs
- Other Descriptive Statistics

Accessing SPSS

Two ways to open SPSS:

- Double-click or open SPSS icon.

- Double-click or open SPSS data file.

Nov12 Gender and
Generations.sav

First steps

Download example data set.

- Go to link https://www.uidaho.edu/-/media/UIdaho-Responsive/Files/sci/stat/scc/student-survey

- Going to link should cause download to start, or download dialog to pop up.

Open example data set.

- Double click on icon for the student-survey.sav file.

Loading and Saving Data sets

- The default SPSS data file format is .sav

- Ways to save in .sav format: use save icon, go to 'File' drop down menu and click on 'Save', press 'Ctrl S'.

- It is only possible to save datasets that you have made changes to since you opened them.

- To save in a different file format, for example as an excel file, go to 'File' drop down, choose 'Save As', then under 'Save as type:' choose the file extension you want – in this case .xlsx

Opening Excel spreadsheets

- Go to 'File' drop down menu in top left corner of data window.
- Scroll down to 'Open' and choose 'Data…' – a new window will pop up.
- In 'Files of type:' scroll down to 'Excel (*.xls, *.xlsx, *.xlsm)' and choose that option from the drop down menu.
- Find the file you'd like to open and click 'Open' button on right side of window.
- This will open a new window with additional import options for your spreadsheet.

Opening Excel spreadsheets (cont.)

- Option: 'Read variable names from the first row of data'

- 'Worksheet:' SPSS can only load in one worksheet at a time, so if your spreadsheet has multiple worksheets, this is where you choose which one to load into SPSS.

- 'Range:' and 'Maximum width for string columns:' can be ignored.

Data view vs Variable view

- Data view: Each row is a single respondent/observation, and each column is a question they answered.

- Variable view: Each row is an individual question from the survey, or column name from the data view. The columns in the variable view describe the characteristics of the questions.

- Together, these can be used to check over whether the data has been SPSS has correctly encoded the data.

Frequency Tables

- Go to 'Analyze' tab on top.

- From dropdown menu, scroll down to 'Descriptive Statistics'.

- A dropdown menu will pop up from the side of 'Descriptive Statistics'. From that menu, click on 'Frequencies...'

- This will open a new window. In that window click on any variables you would like frequencies for and use the arrow button to move them to the 'Variable(s):' box.

- Click 'OK' button on bottom.

Type: Numeric/String

- Numeric: Any numbers
- String: This is characters, so anything where the responses are in the form of characters or words.

Measure: Nominal/Ordinal/Scale

- Nominal: Categories where the order doesn't matter (for example: right-handed/left-handed/ambidextrous, race/ethnicity, gender, major)

- Ordinal: Categories where the order does matter (for example: low/medium/high, year in school, income bracket)

- Scale: Numeric (for example: height, weight, number of Facebook friends)

Checking over your data

- Make sure 'Type' and 'Measure' are encoded correctly.

- For 'Type', check that all numbers are encoded as 'Numeric' rather than 'String'.

- When switching from 'String' to 'Numeric', any non-numeric value in that column will be changed to a missing value, so it's important to check over the values in a column first.

- This can be done using the Frequencies.

Checking data (cont.)

- Find numeric variable that is currently encoded as 'String'.
- Run a frequency on it.
- Look at the levels – are they all numeric?
- If yes, switch variable type from string to numeric.

Switching Type

- Go to Variable View.

- For the variable you are planning to change, click inside the 'Type' cell, where it says either 'Numeric' or 'String'.

- A blue box labelled '…' will appear in cell.

- Click on that box and a window will pop up.

- In that window, click on the correct data type.

- Click the 'OK' button on the bottom of the window.

Switching Measure

- Go to Variable View.

- For the variable you are planning to change, click inside the 'Measure' cell, where it says either 'Nominal', 'Ordinal' or 'Scale'.

- Choose correct option from drop down menu.

Checking the missing value encoding

- Missing values can be questions respondents skipped, or chose not to answer.
- When a response is encoded as a missing value, SPSS does not use it in any of the analyses.
- Some missing values are input in ways that SPSS does not recognize as missing, and are treated by SPSS as categories or numbers.
- 'NA' is often used, and for numeric values, sometimes an impossible numeric value is used as a stand in for missing values.
- When this happens, you can use the 'Missing' column in the Variable View to define missing values in SPSS.

Adding a missing value

- Go to Variable View.
- For the variable you are planning to change, click inside the 'Missing' cell.
- A blue box labelled '…' will appear in cell.
- Click on that box and a window will pop up.
- To choose single values to encode as missing, click on 'Discrete missing values', and enter the values you would like to encode as missing.
- To encode a range of values as missing, click on 'Range plus one optional discrete missing value', and enter the range of values you'd like to be considered missing

Cross tabs

- Go to 'Analyze' tab on top.
- From dropdown menu, scroll down to 'Descriptive Statistics'.
- A dropdown menu will pop up from the side of 'Descriptive Statistics'. From that menu, click on 'Crosstabs…'
- This will open a new window. In that window click on the variable you'd like in the rows of your crosstab, and use the top arrow to move it to the 'Rows' box.
- Click on the variable you'd like in the columns of your crosstab, and use the middle arrow to move it to the 'Columns' box.
- Click 'OK' button.

Adding percentages to your crosstabs

- After adding variables to the 'Row(s)' and 'Column(s)' boxes, click on the 'Cells…' button the right.

- A new window will pop up. Under 'Percentages' you can click 'Row' to get percent of the total across the rows, 'Column' to get the percent of the total down the columns, and 'Total' to get the overall percent per category.

- Once you've selected all percentages of interest, click 'Continue' on the bottom of the window.

- Click 'OK' on the bottom of the next window.

Descriptive Statistics (Mean, Median, Standard Deviation, etc.)

- From the 'Frequencies...', there is an option to output some other descriptive statistics at the same time.

- To do this, click the 'Options..' button on the right side of the window, and check any descriptive statistics you'd like it to output, before clicking the 'OK' button on the bottom of the window.

Descriptive Statistics – Alternate Method

- Go to 'Analyze' tab on top.

- From dropdown menu, scroll down to 'Descriptive Statistics'.

- A dropdown menu will pop up from the side of 'Descriptive Statistics'. From that menu, click on 'Descriptives…'

- This will open a new window. In that window click on any variables you would like frequencies for and use the arrow button to move them to the 'Variable(s):' box.

- This will automatically output the mean, standard deviation, minimum and maximum. For additional statistics, click on 'Options…' button.

- Click 'OK' button on bottom.