

## Introduction to SPSS

### Module 3: Descriptive Statistics

#### SLIDE 1, 2, 3

Modules 1 and 2 covered preparing data for analysis and working with variables. Module 3 will cover summaries and descriptive statistics. Attachments include instructions, sample data, and sample survey.

#### SLIDE 4

Review Levels of Measurement (Nominal, Ordinal, Interval, Ratio)

Review Measures of Central Tendency (Mean, Mode, Median)

Review Measures of Dispersion (Standard Deviation, Range)

#### SLIDE 5

**Reporting variables:** Example: To describe your sample, such as the number of participants, their ages, genders, ethnicities, etc., include any variables that are important in demonstrating that they represent the population of interest (for example, you will need to describe their socio-economic status if you are investigating a particular phenomenon in a population with a specific socio-economic status).

How you describe the overall results for your variables depends on the level of measurement of the variable. Nominal variables, such as type of school (from our sample survey), could be reported as % or number in each category. Ratio variables, such as RSR Math score, could be reported as the range of scores obtained, average score, skewness, and standard deviation.

#### SLIDE 6, 7

**Nominal and Ordinal Variables:** Calculate Frequencies. For example, Gender would be reported as % in each category (\_% males and \_% females, as measured on the sample survey).

1. Go to **Analyze > Descriptive Statistics > Frequencies** from the *Data View* menu bar.
2. Move your variables to the left by highlighting and clicking on the arrow.
3. Choose the **Statistics** box to open *Frequencies: Statistics*
4. Check **mean, standard deviation, skewness, minimum** and **maximum > Continue**.
5. Be sure that *Display Frequency Tables* is checked
6. Select **Charts** to open *Frequencies: Charts*
7. Check **bar charts** and **percentages**, then **Continue > OK**.

Review the output: Frequencies - valid, missing. Frequency table - numbers and percentages.

#### SLIDE 8, 9

**Interval and Ratio Variables:** Calculate Minimum, Maximum, Mean, and Standard Deviation (and skew) for “scale” variables. Age, for example, would be reported with a range (youngest to oldest age in the study), an average, and a standard deviation as “Participants’ ages ranged from 18 to 63 years old with an average age of 25.32 (SD=5.60).” Math scores could be reported as “Math scores ranged from 229 to 323 out of a possible 450. The distribution was negatively skewed (-.526) with an average score of 280.37 (SD=22.5).”

1. Go to **Analyze > Descriptive Statistics > Frequencies** from the *Data View* menu bar to open *Frequencies*.
2. Move your variables by highlighting them and clicking on the arrow.
3. Choose the **Statistics** box and check **mean, standard deviation, skewness, minimum** and **maximum**
4. Select **Continue**.
5. Select **Charts** and check **bar charts** and **percentages**, then **Continue > OK**.

Review the output: Frequencies – now includes mean, standard deviation, skew, minimum, maximum.

SLIDE 10, 11

**Multiple Variables:** To determine the frequency of a combination of variables (works best with nominal or ordinal variables), such as how many of each gender at each type of school, use Crosstabs.

1. Go to **Analyze > Descriptive Statistics > Crosstabs** from the *Data View* menu bar.
2. Move one variable to the *Row* box by highlighting it and clicking on the arrow.
3. Move the other variable to the *Column* box by highlighting it and clicking on the arrow (can also do layers)
4. Check *Display clustered bar charts*
5. Select **Cells** and check Percentages for *rows, columns, and total*
6. Then **Continue > OK**.

Review the output: Out put will be rows (levels of one variable) by columns (levels of the other variable).

SLIDE 12

**Transferring and Printing:** Tables can be made in SPSS but may be difficult to transfer to Word in a form that you can use. You can have SPSS do the calculations, print it out, then make your APA table in Word and type in the numbers manually. Graphs, on the other hand, are easier to transfer to Word. Be sure to save them so you can go back to them in SPSS to make APA format corrections. Review and reduce before printing.

SLIDE 13, 14, 15

Recap and Modules