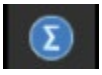
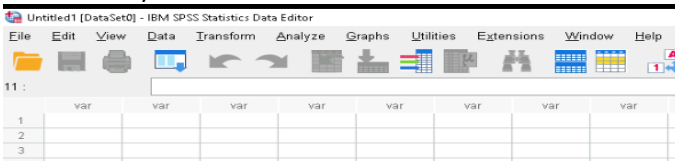
STA 215 SPSS 29 How-To Sheet

Utilities

Opening SPSS

On student network → Lab Applications → Statistics → IBM SPSS Statistics [A welcome to SPSS dialog box pops up. Just close it. You may need to click on the SPSS symbol  on your taskbar to access the SPSS Data Editor



Opening textbook data

Open SPSS as above → File → Open → Data. Click on  next to Look In → Scroll to GVSU-LABDATA (R:) → STAT → 215 Text → Data → SPSS → name of data set. [A dialog box named Open Data might open asking you: *To set the width of all string variables to the minimum required to hold the data, select "Yes".* if this happens, click Yes.

CH 2: Categorical Data

Frequency Table

Analyze → Descriptive Statistics → Frequencies → Drag variable into Variable(s): → OK

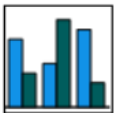
Bar Graph

Graphs → Chart Builder → under Choose from: Choose Bar → Pick  → Drag and Drop in Chart preview → Under Variables: choose variable and drag and drop on X-Axis → OK

Two-Way Table

Analyze → Descriptive Statistics → Crosstabs → Drag and drop explanatory variable to Row(s) → Drag and drop response variable to Column(s) → OK

Clustered Bar Graph

Graphs → Chart Builder → Under Choose from: Choose Bar → Pick  → Drag and Drop in Chart preview → Under Variables: choose response variable and drag and drop on X-Axis → Under Variables: choose explanatory variable and drag and drop on Cluster on X → Element Properties → Edit Properties of: choose Bar1 → Statistic: choose Percentage (?) → Set Parameters: choose Total for Each Legend Variable Category → Continue → OK

CH 3: One Quantitative

Basic Numerical Summaries

Analyze → Descriptive Statistics → Explore → Under Display: Be sure Both or Statistics is marked → Drag and drop variable to Dependent List → Click Statistics button in upper right → Check Descriptives and Percentiles → Continue → OK

Percentile

Analyze → Descriptive Statistics → Percentiles → Drag and drop variable to Variable(s) → Custom → Type in Percentile (ex. 90) → Add → OK

Boxplot

You get this in Numerical Summaries as long as Both or Plots is marked under Display

Histogram

Graphs → Chart Builder → Under Choose from: Choose Histogram → Pick  → Drag and Drop in Chart preview → Under Variables: choose variable and drag and drop on X-Axis → OK

CH 5: Estimation

Confidence Interval on p

Analyze → Compare Means and Proportions Explore → One-Sample Proportions → Drag and drop variable to Test Variable(s) → Under Define Success Click Value(s) → Type in success (ex. Yes) → OK

Confidence Interval on μ

Analyze → Descriptive Statistics → Explore → Under Display: Be sure Both or Statistics is marked → Drag and drop variable to Dependent List → Click Statistics button in upper right → Check Descriptives → Put the confidence level in the box left of % and right of Confidence interval for Mean. → Continue → OK

CH 6: Two Quantitative

Scatterplot

Graphs → Chart Builder → Under Choose from: Choose Scatter/Dot → Pick  → Drag and Drop in Chart preview → Under Variables: Choose explanatory variable and

drag and drop on X-Axis → Under Variables: Choose response variable and drag and drop on Y-Axis → OK

Linear Correlation

Analyze → Correlate → Bivariate → Drag and drop explanatory and response variables to Variables: → OK

Linear Regression

Analyze → Regression → Linear → Drag and drop response variables to Dependent: → Drag and drop explanatory variable to Independent(s): → OK

Scatterplot By-Group

Graphs → Chart Builder → Under Choose from: Choose Scatter/Dot → Pick  → Drag and Drop in Chart preview → Under Variables: Choose explanatory variable and drag and drop on X-Axis → Under Variables: Choose response variable and drag and drop on Y-Axis → Choose grouping variable and drag and drop on Set Color → OK

CH 7: Hypothesis Testing Introduction

χ^2-Test

Follow instructions to make a Two-Way Table. Before clicking OK → Click Cells → Under Counts: check both Observed and Expected → Continue → Statistics → check Chi-square → Continue → OK

Expected Counts

See χ^2-Test above

Confidence Interval for the Difference in Two Proportions

Analyze → Compare Means and Proportions Explore → Independent Samples Proportions → Drag and drop response variable to Test Variable(s) → Drag and drop variable defining groups to Grouping Variable: → Under Define Groups Click Value(s) Group 1 → Type in group (ex. Female) → Under Define Groups Click Value(s) Group 2 → Type in group (ex. Male) → OK

CH 8: Hypothesis Testing Means

Create Paired Data Difference Variable

Transform → Compute Variable →
Under Target Variable, name the variable Difference → Drag and drop the first variable into Numeric Expression → Click on the minus symbol → Drag and drop the second variable into Numeric Expression after the minus symbol → OK

Note: Once you have the variable Difference, you can find any numerical summaries or graphs following CH 3 One Quantitative.

Paired T-Test

Analyze → Compare Means and Proportions → Paired-Samples T Test → Drag and drop the first variable into Variable1 → Drag and drop the second variable into Variable2 → OK

Paired T-Test Confidence Interval

Follow the instructions for Paired-Samples T-Test. You get a 95% CI → To change the confidence level, before you click OK, click Options → Put level into Confidence Interval Percentage → Continue → OK

Basic Numerical Summaries By-Group

Analyze → Descriptive Statistics → Explore → Under Display: Be sure Both or Statistics is marked → Drag and drop quantitative variable to Dependent List → Drag and drop categorical variable to Factor List → Click Statistics button in upper right → Check Descriptives and Percentiles → Continue → OK

Boxplot By-Group

You get this in Basic Numerical Summaries By-Group as long as Both or Plots is marked under Display

Histogram By-Group

Graphs → Histogram → Drag and drop quantitative variable to Variable → Drag and drop categorical variable to Rows → OK

Independent T-Test

Analyze → Compare Means and Proportions → Independent-Samples T Test → Drag and drop quantitative variable to Test Variable(s) → Drag and drop categorical variable to Grouping Variable. → Define Groups. Type values in Group 1 and Group 2. → Continue → OK

CI Difference in Two Means

Follow the instructions for Independent T-Test. You get a 95% CI → To change the confidence level, before you click OK, click Options → Put level into Confidence Interval Percentage. → Continue → OK

ANOVA

Analyze → Compare Means and Proportions → One-Way ANOVA → Drag and drop quantitative variable to Dependent List → Drag and drop categorical variable to Factor → OK. Note: The Factor variable must be entered into SPSS as numerical values such as 0, 1, 2 that represent the different groups.