

Quick Reference for Basic SPSS 19.0 Procedures

After you have put your data in a data file using the Data Editor, you can use SPSS to compute all sorts of statistics. This handout provides a brief guide to the statistics you will be computing for your problem sets. If you need more information about these SPSS statements or other statistics, you can use the HELP command in SPSS.

COMPUTING DESCRIPTIVE STATISTICS (means, standard deviations, variance, etc.)

To obtain descriptive statistics, from the menus choose:

Analyze
 Descriptive Statistics
 Descriptives

Your variables will appear on the list on the left. Select one or more variables for which you want statistics by clicking on the variable and then clicking on the arrow. When you have chosen all variables, click on **OK**.

If you want statistics other than the standard (mean, standard deviation, min, max), click on **Options**, select them, go back to the **Descriptives** menu (click on **Continue**) and then click on **OK**.

COMPUTING FREQUENCIES (a tally of values for selected variables)

To obtain frequencies, from the menus choose:

Analyze
 Descriptive Statistics
 Frequencies

Your variables will appear on the list on the left. Select one or more variables for which you want frequencies by clicking on the variable and then clicking on the arrow. When you have chosen all variables, click on **OK**.

To obtain additional statistics for these variables, in addition to frequencies, click on **Statistics** and select the statistics you want computed, then click on **Continue** to go back to the **Frequencies** menu. Click on **OK**.

To obtain a histogram or bar chart, click on **Charts**, select the type of chart you want, then click on **Continue** to get back to the **Frequencies** menu. Click on **OK** to run procedure.

COMPUTING A CROSSTABULATION (frequency of values for one variable with another variable)

To obtain a crosstabulation, from the menus choose:

Analyze
 Descriptive Statistics
 Crosstabs

Your variables will appear on the list on the left. Select one variable and click on the arrow next to the Row(s) list box. This moves that variable to the Row(s) list. Then select a variable and click on the arrow next to the Column(s) list. This moves this variable to the Column list. Now click on **OK** to run the crosstab.

To obtain other statistics for these variables (such as Chi-Square or correlations), click on **Statistics**, select the statistics you want computed, then click on **Continue** to go back to the **Crosstabs** menu. Then click on **OK** to obtain the statistics.

To obtain percentages for the cells, rows, and/or columns, click on **Cells** (on the **Crosstabs** menu), select the options you want, and then click on **Continue** to go back to the **Crosstabs** menu. Click on **OK** to run the procedure.

COMPUTING CORRELATIONS (Pearson product moment correlations)

To obtain correlations, from the menus choose:

Analyze
 Correlate
 Bivariate

Your variables will appear on the list at the left. Select variables for analysis by highlighting the variable and then click on the arrow. You have to select at least two variables to compute a correlation. The default (standard) setting displays a two-tailed Pearson product -moment correlation. This is usually what you want. To obtain the correlations, click on **OK**.

COMPUTING A LINEAR REGRESSION ANALYSIS

To obtain a regression analysis, from the menus choose:

Analyze
 Regression
 Linear

Your variables will appear on the list at the left. Select the dependent variable (criterion variable) by highlighting the variable and clicking on the arrow (\Leftarrow). Now select one or more independent variables (predictor variables) by highlighting the variable and then clicking on the other arrow (\Rightarrow). If you want the default forced entry procedure, just click on **OK** to get the analysis.

If you want another type of analysis (e.g., stepwise, backward, forward), change the Method using the arrow key (\Downarrow) next to the method box to select the procedure, then click on **OK**.

To obtain additional statistics for your variables, click on the **Statistics** box, then on **Descriptives** for means, standard deviations, and/or correlations. Click on **Continue** until you are back at the **Linear Regression** menu. Click on **OK** to run the procedure. You can also obtain a plot of your data by clicking on **Plots** and choosing the desired options.

OBTAINING A SIMPLE SCATTERPLOT (graph of two variables)

To obtain a scatterplot, from the menus choose:

Graphs
 Legacy Dialogs
 Scatter/Dot

This opens the scatterplot menu, highlight the **Simple** picture and click on **Define**. Your variables will be listed on the left. Highlight the variable you want on the Y-axis and click on the Y axis arrow (\Rightarrow). Then, highlight the variable for the X-axis and click on the X axis arrow (\Leftarrow). To get a simple scatterplot in default form, click on **OK**.

OBTAINING MEANS FOR SUBGROUPS OF THE DATA (e.g., means for GPA for males versus females)

To obtain means for subgroups in the data set, choose from the menus:

Analyze
 Compare Means
 Means

This opens the **Means** menu. Select your dependent variable (gpa in my example) by highlighting it in your variable list and clicking on the arrow. Now select your independent variable (sex in my example) and click on the bottom arrow. Click on **OK**. This will give you the means, standard deviations, and number of cases for males and females for gpa.

SELECTING ONLY CERTAIN CASES TO ANALYZE (such as only the data for the females)

To select a subset of cases for analysis, from the menus choose:

Data
 Select Cases

This opens the Select Cases menu. In the Output box, choose the **Filter out unselected cases** alternative for the treatment of the unselected cases (e.g., males in my example). If you choose **Deleted** the other cases will be deleted from the data file. You usually don't want this to happen!

Now you have to select your cases based on some conditional statement. So, select the **If condition is satisfied** statement and click on **IF**. In the box, type the statement that defines the cases you want to select for analysis (e.g., sex=2) or use the variable list, calculator, etc. to paste the information in the box. Then, click on **Continue** and **OK**. After choosing your subset of the data, all future analyses will only use that sample. To include all data, go back into the **Select Cases** menu and select **All Cases**, then click on **OK**.

COMPUTING AN INDEPENDENT GROUPS T-TEST

To obtain this t-test, from the menus choose:

Analyze
 Compare Means
 Independent-Samples T Test

This opens the **Independent-Samples T-Test** menu. Choose one or more dependent variables (called test variables in the menu) by highlighting them on the variables list and then clicking on the arrow \Rightarrow . Then choose the independent variable (called group variable) and click on the other arrow \Leftarrow . You must define two groups for the independent (grouping variable). Highlight the grouping variable and click on **Define Groups**. Most of the time you will want the default, **Use Specified Variables**. Simply enter the value that corresponds to group 1 (e.g., For the sex variable, 1 corresponds to males) and then the value that corresponds to group 2 (e.g., 2 corresponds to females). Click on **Continue** and then on **OK** to run the procedure.

COMPUTING A PAIRED (OR CORRELATED) SAMPLES T TEST

To obtain this type of t-test, choose from the menu:

Analyze
 Compare Means
 Paired-Samples T Test

This opens the **Paired-Samples T Test** menu. Click on the first variable (e.g., Pretest) and the arrow \Rightarrow , the variable will appear as Pair 1, Variable 1 in the Paired Variables box. Click on the second variable that you are comparing to the first variable (e.g., Posttest) and the arrow \Rightarrow , it will appear as Pair 1, Variable 2. Click on the \Leftrightarrow arrow to move a variable from Variable 1 to Variable 2. Click on the \uparrow or \downarrow arrows to switch the order of your pairings. Click on **OK** to run the procedure.

COMPUTING A ONE-WAY ANALYSIS OF VARIANCE (one independent variable with three or more conditions)

To obtain a one-way Anova, from the menu choose:

Analyze
 Compare Means
 One-Way Anova

This opens the **One-Way Anova** menu. Select your dependent variable and click on the first arrow⇒. Then select your independent variable and click on the other arrow⇐. Then click on **OK** to run the procedure.

To obtain means and standard deviations for your groups, click on **Options**, select **Descriptive**, and click on **Continue**. To get Post-hoc Comparisons or Contrasts, click **Post Hoc** and select the option you want. Click on **OK** to obtain the anova and other statistics.

COMPUTING A FACTORIAL ANALYSIS OF VARIANCE (you can use this to conduct a one-way or two way anova)

To obtain an analysis of variance when you have one or more than one independent variables, choose from the menus:

Analyze
 General Linear Model
 Univariate

This opens the **Univariate** menu. Select your dependent variable and click on the first arrow⇒. Then select your independent variable(s) (Fixed Factors) and click on the second arrow⇐. Click on **OK** to run the test.

To obtain means and standard deviations for your dependent variables by the levels of your independent variables (Hint: you will always want to do this!!), before running the procedure, click on **Options**. Click on the box for **Descriptive** statistics. Click on **Continue** and then **OK** to run the procedure.

COMPUTING A NEW VARIABLE

(e.g., computing a new variable that is the sum of four other variables)

To compute a new variable from existing variables, you need to be in the SPSS data editor. Choose from the menus:

Transform
Compute

Type in the name of your new variable in the **Target Variable** box (e.g., Score) and go to the **Numerical Expression** box and type in or select the numerical expression that tells SPSS how the new variable will be created. For example, if the new variable (**Score**) is the sum of VarA, VarB, and VarC, the numerical expression would be: **SUM(VarA, VarB, VarC)**. Then click on **OK**. SPSS will have created your new variable which will be located in the last column in your data file.

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