**Data Analysis for Marketing Research in Excel**

**WARNING:** Before starting, lock your data file so you don’t accidentally mess up your data as you run the analysis. Also be sure to have a backup file of your data.

**To calculate mean, minimum, and maximum**

To calculate a mean

1. Open your dataset.

2. Select a cell at the bottom of the column representing the variable whose mean you’d like to calculate.

3. In this cell, type: =AVERAGE(range)

For example, if you want to calculate the average for the 160 cases in column B, you would type: =AVERAGE(B2:B161)

This example assumes the name of the variable is typed in cell B1

To find the minimum value for a variable

1. Open your dataset.

2. Select a cell at the bottom of the column representing the variable whose minimum you’d like to find.

3. In this cell, type: =MIN(range)

To find the maximum value for a variable

1. Open your dataset.

2. Select a cell at the bottom of the column representing the variable whose maximum you’d like to find.

3. In this cell, type: =MAX(range)

To find the standard deviation for a variable

1. Open your dataset
2. Select a cell you want to put the value into
3. In this cell, type =STDEV.S(range)   
   Here we use standard deviation for a sample since we typically don’t have whole population

To find the confidence interval for the mean of a variable

1. Open your dataset
2. Select a cell you want to put the value into
3. In this cell, type =CONFIDENCE.T(alpha, standard deviation, size)  
   input alpha (significance level) where it equals 1 minus your desired level of confidence (e.g., 95% confidence corresponds to 0.05 alpha  
   input standard deviation of the sample   
   input size of the sample (n)

**F-test Two-Sample for Variances**

1. In Excel, click Data Analysis on the Data tab.
2. From the Data Analysis popup, choose F-Test Two-Sample for Variances
3. Under Input, select the ranges for both Variable 1 and Variable 2.
4. Check the Labels checkbox if you have meaningful variable names in row 1. This option makes the output easier to interpret. Ensure that you include the label row in step #3.
5. Excel uses a default Alpha value of 0.05, which is usually a good value. Alpha is the significance level. Change this value only when you have a specific reason for doing so.
6. Click OK.

**Independent T-test**

1. In Excel, click Data Analysis on the Data tab.
2. From the Data Analysis popup, choose
   1. t-Test: Two-Sample Assuming Equal Variances if you cannot reject the F-test Two-sample for Variances
   2. t-Test: Two-Sample Assuming Unequal Variances if you reject the F-test Two-sample for Variances
3. Under Input, select the ranges for both Variable 1 and Variable 2.
4. Check the Labels checkbox if you have meaningful variable names in row 1. This option makes the output easier to interpret. Ensure that you include the label row in step #3.
5. Excel uses a default Alpha value of 0.05, which is usually a good value. Alpha is the significance level. Change this value only when you have a specific reason for doing so.
6. Click OK.

**To create a frequency distribution**

1. Open your dataset.

2. Highlight the column of data you want a frequency distribution for; include the variable name in row 1.

3. Select the Insert tab at the top of your Excel window, then select Pivot Table from the dropdown menu under Tables.

4. Make sure New Worksheet is selected and click OK. A new worksheet will appear.

5. In the PivotTable Fields panel on the right of the new worksheet, you’ll see the variable name. Move the variable name into the Rows box.

6. Also move your variable to the Values box.

 7. The Values box now reads “Sum of [your variable name].” Click the after this and select Count, then OK. The Values box will now read “Count of [your variable name].” Your frequency distribution appears on your Excel sheet on the left.

**Add row labels to your frequency distribution**

8. The rows in your frequency distribution have numbers for labels. Replace each label number with a word description. For example, if 1=freshman, 2=sophomore, etc., replace 1 with the word freshman and 2 with the word sophomore, etc.

**Calculate percentages for your frequency distribution**

The following procedure works on a Mac. The “Show data as” option may appear in a different location on a PC.

9. Copy and paste your pivot table onto a fresh location on your worksheet.

10. Select one of the values in the pivot table frequency distribution that you want to turn into a percentage; right click on that value.

11. Select “Summarize Values By” and then “More options”

12. In the dialog box, select “Show data as”

13. In the dropdown menu, change “No calculation” to “% of Column Total.” Click OK. Your table will now show percentages.

**To create a crosstabulation table**

1. Open your dataset

2. Copy the two columns of data you want for your crosstabulation into a new sheet in Excel; include the variable names in row 1.

3. In your new sheet, highlight the two columns, including the variable names, and select the Insert tab at the top of your Excel window, then select Pivot Table from the dropdown menu under Tables.

4. Make sure New Worksheet is selected and click OK. A new worksheet will appear.

5. In the PivotTable Fields panel on the right of the new worksheet, you’ll see your two variable names. Choose which variable you want to be represented in the column of your table and move it to the Columns box.

6. Move the other variable to the Rows box.

7. Choose one of your variables to also move to the Values box (it doesn’t matter which one).

 8. The Values box now reads “Sum of [your variable name].” Click the after this and select Count, then OK. The Values box will now read “Count of [your variable name].” Your crosstabulation appears on your Excel sheet on the left.

**Add row and column labels to your crosstabulation**

9. The rows and columns in your crosstabulation table have numbers for labels. To make the table easier to interpret, replace the label number with a word description. For example, if 1=freshman, 2=sophomore, etc., replace 1 with the word freshman and 2 with the word sophomore, etc.

10. Do this for both the row labels and the column labels. (You may need to increase the width of some of the columns.)

**Calculate row or column percentages in your crosstabulation**

The following procedure works on a Mac. The “Show data as” option may appear in a different location on a PC.

11. Decide whether you want to calculate row or column percentages for your table.

12. Copy and paste your pivot table onto a fresh location on your worksheet.

13. Select one of the values in the pivot table that you want to turn into a percentage; right click on that value.

14. Select “Summarize Values By” and then “More options”

15. In the dialog box, select “Show data as”

16. In the dropdown menu, change “No calculation” to “% of Row Total” if you want a row percentage or “% of Column Total” if you want a column percentage. Click OK. Your table will now show percentages.