

# Course 3 Capstone

Data Collection

# Finding the Middle (Adware Ad Clicks)

Mean, Median, and Mode help you compare data. Below, list the mean, median, and mode of the clicks in the provided data.

Mean: 60.38

Median: 60.00

Mode: 78

# Finding the Middle (Adware Ad Conversions)

Mean, Median, and Mode help you compare data. Below, list the mean, median, and mode of the conversions in the provided data.

Mean: 5.98

Median: 6.00

Mode: 5

# Standard Deviation

Determining variance in data helps you to look at data spread. Below, enter the standard deviation of the provided data.

Standard Deviation of Clicks: 14.37

Standard Deviation of Conversions: 1.63

# Frequency and Contingency Tables

Understanding how often something happens is important to understanding trends and patterns in your data. Create and insert a contingency table generated from your data.

## AdwareAdConversions

### Number of Occurances

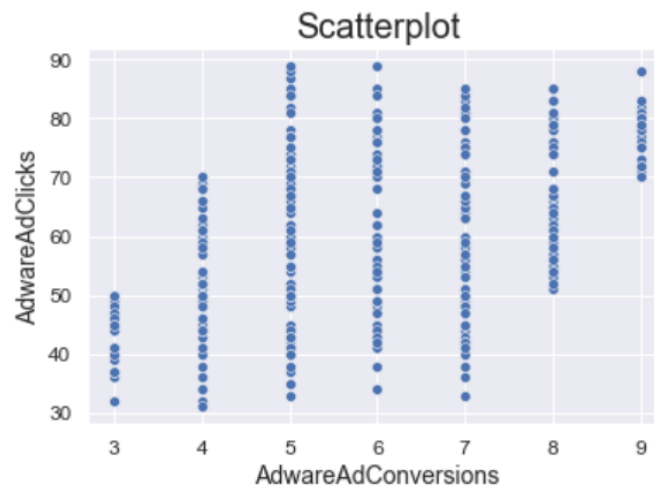
1 to 5	686
6 to 10	1497

# Scatter Plot

Understanding the relationships between data is important to understanding trends and patterns. Create and insert a scatter plot generated from your data. Then, include the input the correlation coefficient as well.

Correlation coefficient: 0.45

Scatter Plot of your data:

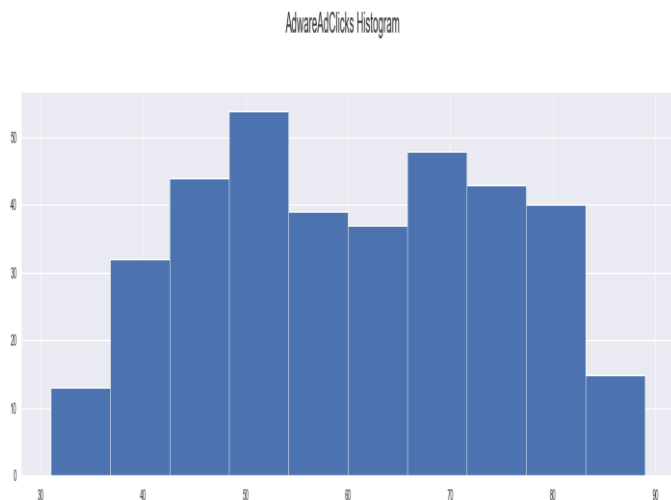


End of Section 1

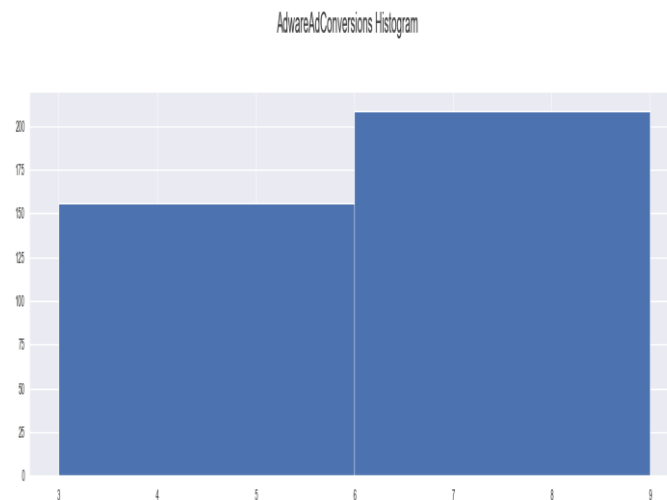
# Sample Type

It's important to understand the sample you're using in your analysis. Fill in the information below about the sample you have received:

Histogram of your clicks data:



Histogram of conversions data:





# Sample Type

It's important to understand the sample you're using in your analysis. Fill in the information below about the sample you have received:

Does the clicks data have a normal distribution? No

Does the conversions data have a normal distribution? No

# Variable Types

Determining the types of variables your working with is an important skill. Below, list the variables from your data that are:

Quantitative:

Continuous: AdWords Ad Views, AdWords Ad Clicks, Cost per AdWords Ad, AdWords Click-Through Rate, AdWords Conversion Rate, AdWords Cost per Click

Discrete: None

Qualitative:

Nominal: None

Ordinal: None

End of Section 2

# Question and Hypothesis

The question you hope to answer and your hypothesized answer are necessary to complete an analysis. Answer the following questions

What is your hypothesis based off the evaluation question?

Are the number of conversions in Facebook greater than AdWare Ad when more advertising is done there?

# Question and Hypothesis

The question you hope to answer and your hypothesized answer are necessary to complete an analysis. Answer the following questions

What is your independent variable? Cost per Facebook Ad

What is your dependent variable? Facebook Ad  
Conversions

# Running a Test

With your question and hypothesis ready, run the test on the two sets of data. Fill in the information below.

Mean number of Facebook conversions: 11.74

Mean number of Adware conversions: 5.98

p-Value:  $9.34 \exp(-134)$

# Hypothesis

After running the test, was your hypothesis proven correct?

Do your findings support a null or an alternative hypothesis? xx

What's your conclusion about your main hypothesis? Is there a difference, and is it what your hypothesis predicted?

Since the p-value calculated is less than 0.05,  $H_0$  is rejected, and  $H_1$  is accepted.

There is a statistical difference between Facebook and AdAware Ad Conversions.

End of Section 3



# Determining a Model

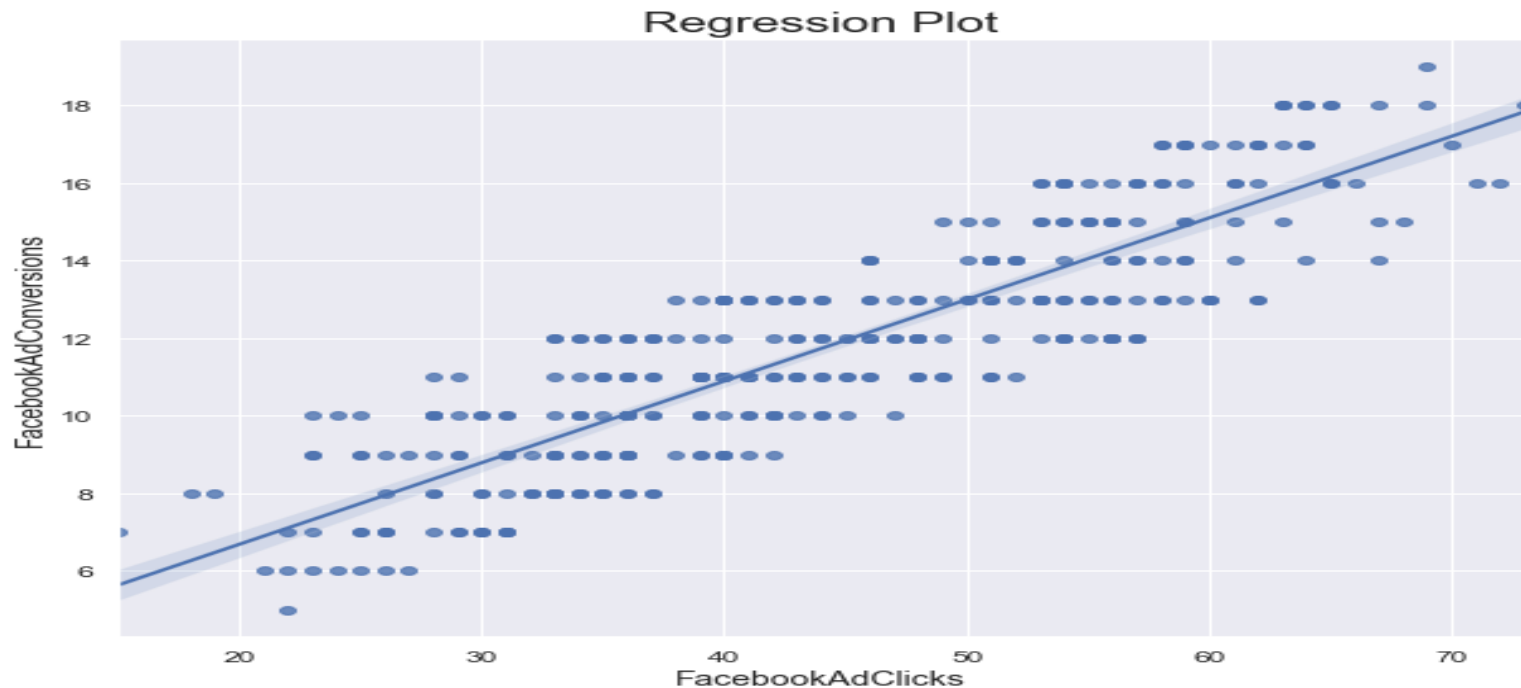
Based off what you know so far, you'll need to determine if your data meets the assumptions for a chosen model. Including:

Which model makes the most sense to use and why?

Simple Linear Regression is chosen due to one independent and one dependent variable. Both variables are normally distributed.

# Modeling

Finally, include a visualization of your complete model.



End of Section 4

# Final Insights

Now, knowing what you do about the results of your test, what are the final insights that you would share with your client? What did you learn and what would you recommend? Is there anything you would do differently next time?

From hypothesis testing done, we have found out that Facebook Ad has better conversion results than AdWare Ad.

We recommend the company use Facebook Ad to advertise and market their products and services to customers.

We can do several more comparisons with other equivalent online advertisements to find out its effectiveness.