

Reminders...

- You'll use **this file** for the entirety of this course. Save it in a place where you can easily access it over the upcoming weeks.
 - You can edit and save this document in Google Drive
 - If you download this document, keep it in a place you can find it later
- The content you put into this document will be used for later lessons
 - It is recommended that you do not skip any capstone readings in any of the lessons
 - It is recommended that you start you complete update this document after every week of content and start with week 1
- Requirements:
 - Answer all the questions in this document
 - When complete, download this as a PDF document for submission in the peer review assignment.
 - Don't know how to download as a PDF? You can find more information about downloading this by [clicking here](#).
 - Remove this slide before submitting

Course 3 Capstone

Data Collection

Finding the Middle

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

Mode: 78

Finding the Middle

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

Mode: 5

Standard Deviation

Determining variance in data helps you [why this is helpful]. Below, enter the standard deviation of the provided data.

Standard Deviation of Clicks: 14.368

Standard Deviation of Conversions: 1.628

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.

Placeholder, replace this image

- CMD+Click or Right Click and select "Replace Image"
- Then, select the visualization, graph, etc. that you want to include

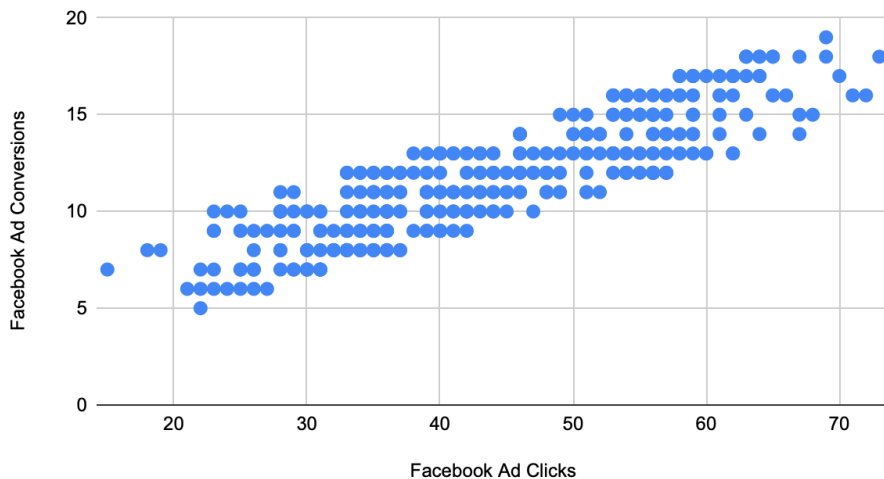
Scatter Plot

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: 0.44799

Scatter Plot of your data:

Facebook Ad Conversions vs. Facebook Ad Clicks



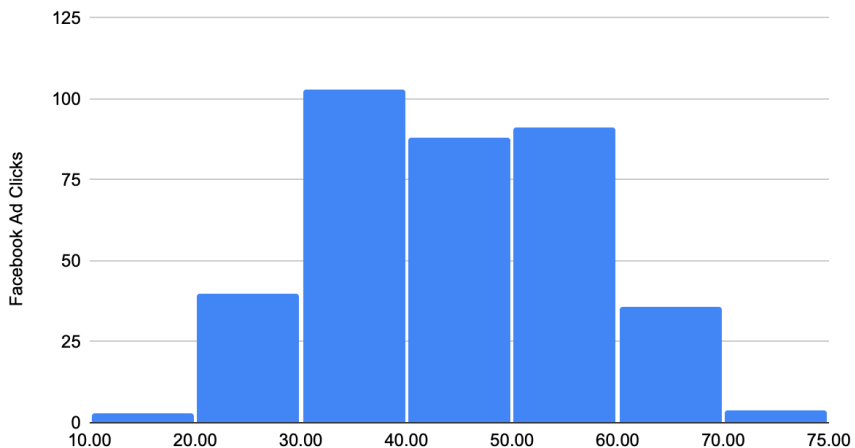
End of Section 1

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:

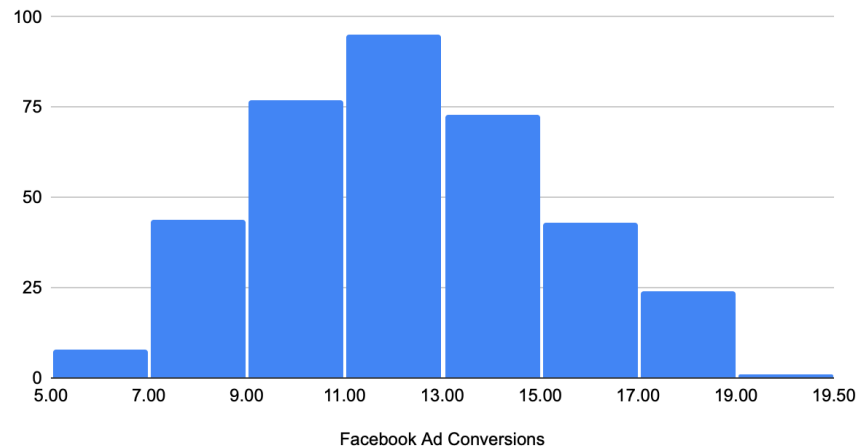
Histogram of your clicks data:

Facebook Ad Clicks



Histogram of conversions data:

Histogram of Facebook Ad Conversions



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? Yes

Does the conversions data have a normal distribution? Yes

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: Cost Per AdWords Ad, AdWords Clickthrough Rate, AdWords Conversion Rate, AdWords Cost Per Click.

Discrete: AdWords Clicks, Adwords Views, Adwords Ad Conversions

Qualitative:

Nominal: xx

Ordinal: xx

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? Number of Conversions are higher when done on Facebook as opposed to AdWords.

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? Ad Conversions

What is your dependent variable? Ad Conversion Rate.

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: 4.5597E-146

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?

There is a statistically significant difference between ads run on facebook and Adwords; since the p-value is below 0.05 i reject the null hypothesis that there isn't a difference and accept my prior hypothesis that such a difference exists.

End of Section 3

Determining a Model

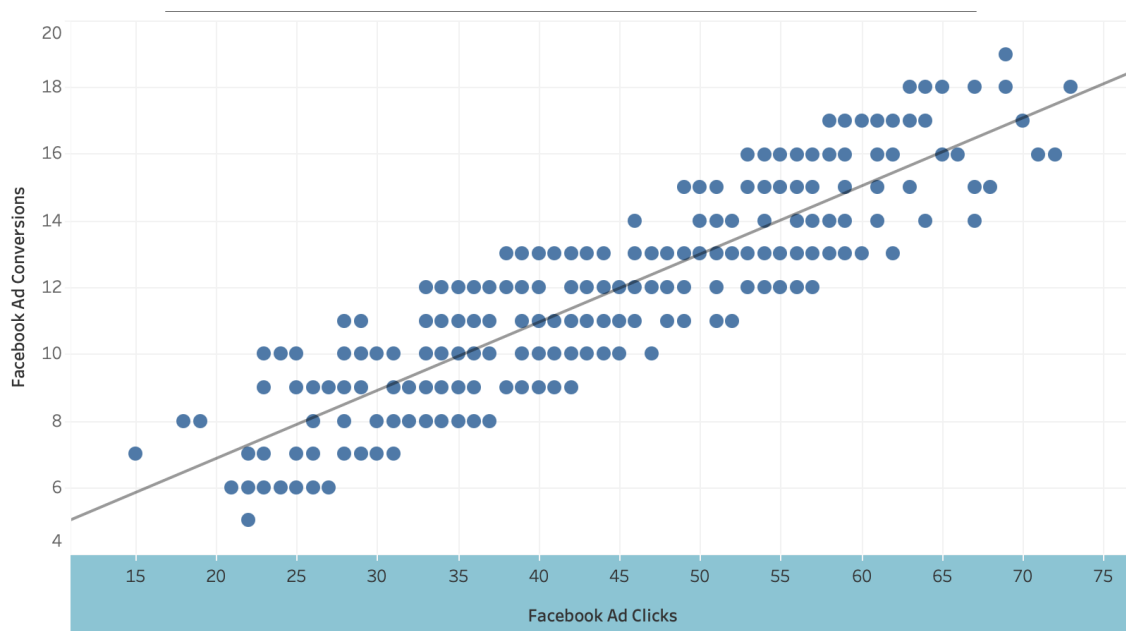
Based off what you know so far, you'll need to determine if your data meets the assumptions for a chosen model. Including:

Which model makes the most sense to use and why?

A simple linear model is my choice; this is because the focus is on two variables; one dependent and the other independent, with both being quantitative variables

Modeling

Finally, include a visualization of your complete model.



End of Section 4

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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?

Enter your insights here:

There is a significant difference in conversion rates between ads run on Facebook and ads run on AdWords. Ads run on Facebook tend to do better, slightly over two times the conversion rate on Adwords to be precise.