

Reminders...

- You will use this file for the entirety of this course. Save it in a place where you can easily access it over the upcoming modules.
 - 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
 - Do not skip any capstone activities in any of the lessons
 - Update this document at the end of each module and start with Module 1

Course 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: 14.37

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.

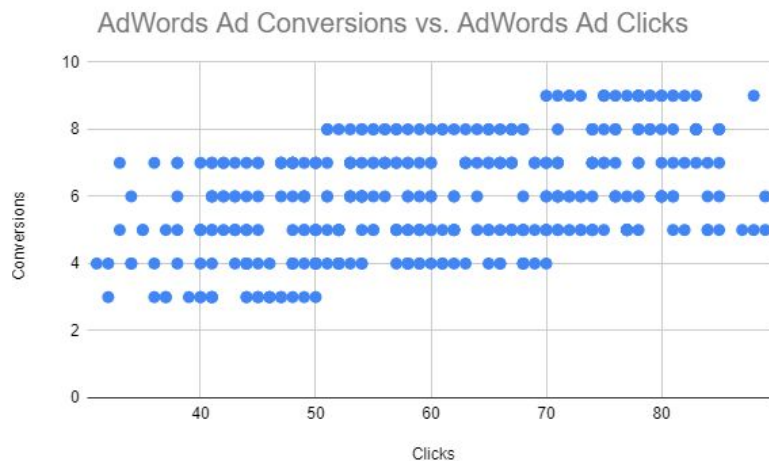
Number of AdWorks Conversions Grouping for 2023			
6-	6 to 10	11 to 15	15+
156	209	0	0

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:

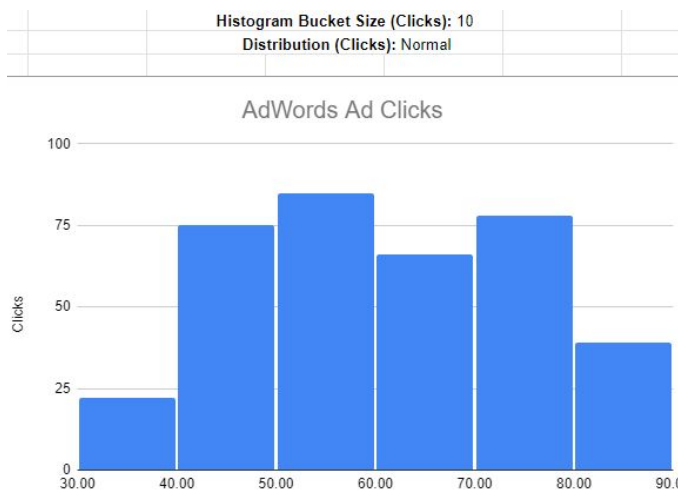


End of Module 1

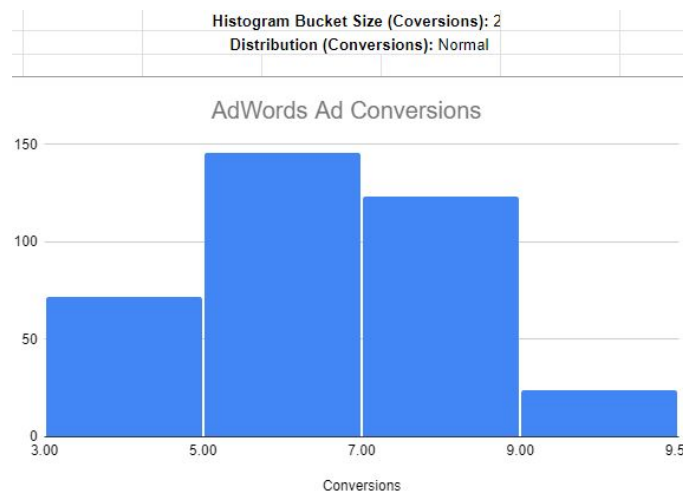
Sample Type

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:



Module 2: 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 Click-Through Rate, Adwords Conversion Rate, AdWords Ad Views

Discrete: AdWords Ad Clicks, AdWords Conversion, AdWords Ad Views

Qualitative:

Nominal: AdWords ad Campaign

Ordinal: n/a

End of Module 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?

"There will be a significant difference in the number of conversions between the Facebook platform and the AdWords platform, with the Facebook platform yielding a higher number of conversions due to its more effective user engagement strategies."

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? Advertising Platform (Facebook and AdWords)

What is your dependent variable? Number of 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: 11.74246575

Mean number of Adware conversions: 5.980821918

p-Value: 0

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 < 0.05 is less**, we have to reject the null hypothesis (H0). This indicates that there is a statistically significant difference between Facebook and AdWords conversions, supporting your alternative hypothesis (H1).

End of Module 3

Determining a Model

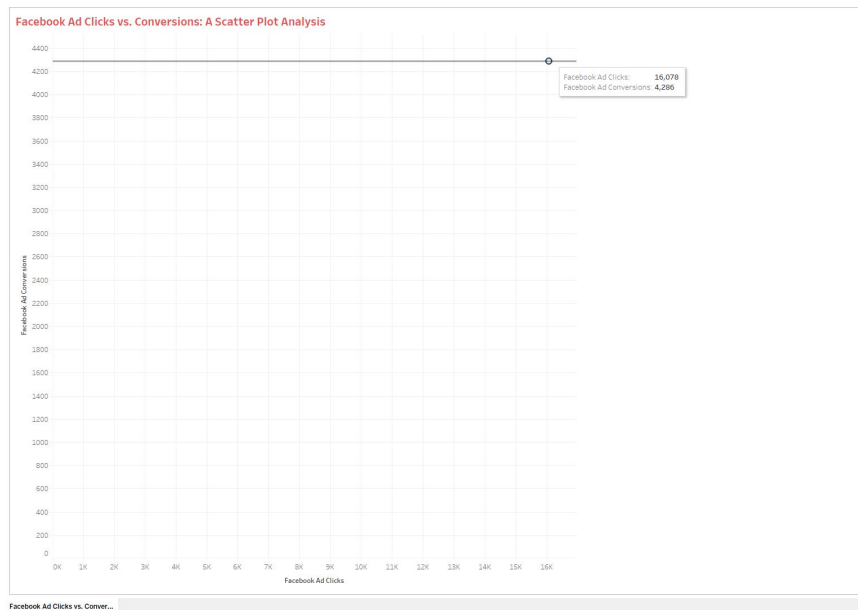
Based off what you know so far, you'll need to determine if your data meets the assumptions for a chosen model. Including:

Which model makes the most sense to use and why?

The “**Simple Linear Regression**” Model is the model that makes the most sense due to the fact it align with the purpose of the goal of predicting the conversions based on clicks.

Modeling

Finally, include a visualization of your complete model.



End of Module 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?

Enter your insights here:

The analysis revealed that Facebook Ads outperform AdWords in generating conversions per click, confirming our initial hypothesis. I recommend increasing the budget for Facebook Ads and focusing on optimizing click-through rates, while also refining audience targeting. Future strategies should include A/B testing of ad creatives and a longitudinal approach to track performance trends. Key lessons include the importance of data quality and validating model assumptions. Overall, leveraging these insights will enhance ad effectiveness and drive higher conversions moving forward.