

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 conversions in the provided data.

Mean: 5.98

Median: 6

Mode: 5

Standard Deviation

Determining variance in data helps you understand how the spread of the data. 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. The table below shows the frequency distribution of data on Adword Ad Conversions by Grouping for 2019.

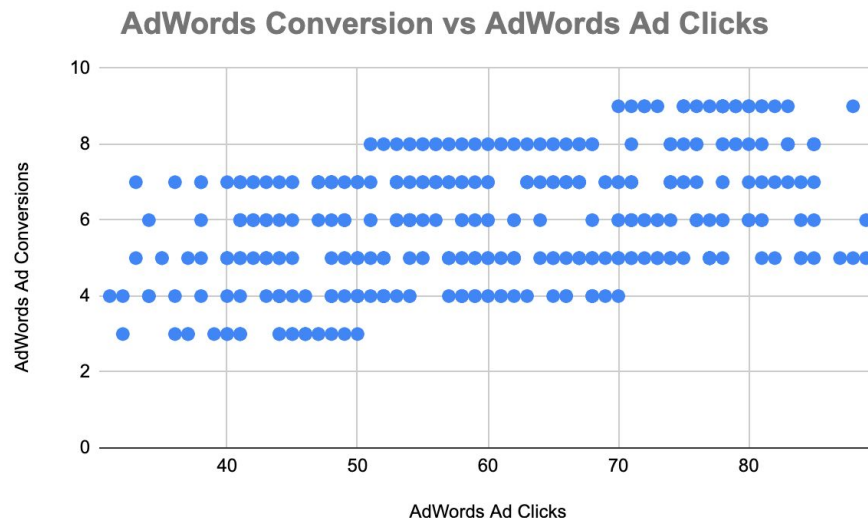
Number of Adword Ad Conversions by Grouping for 2019				
Number of Conversions:	1 to 5	6 to 10	11 to 15	16+
Number of Occurrences:	156	209	168	0

Scatter Plot

Understanding the relationships between Adwords Ad Clicks and AdWords Ad Conversion it is important to understanding trends and patterns.

Coefficient of Correlation: 0.4479932009

Scatter Plot of your data:

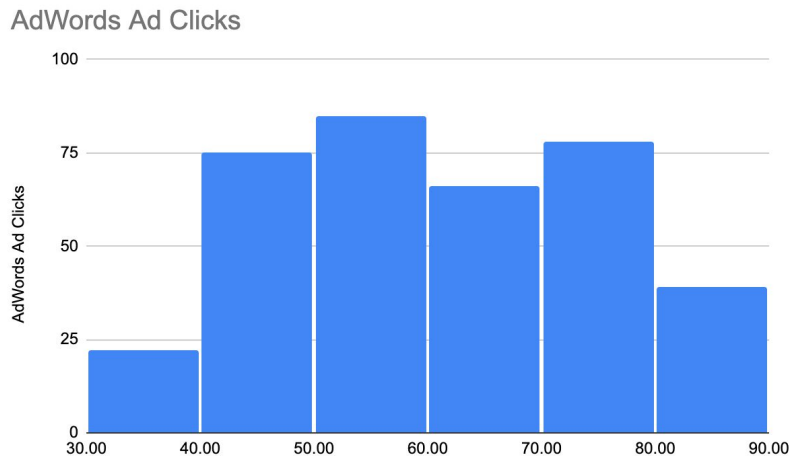


End of Section 1

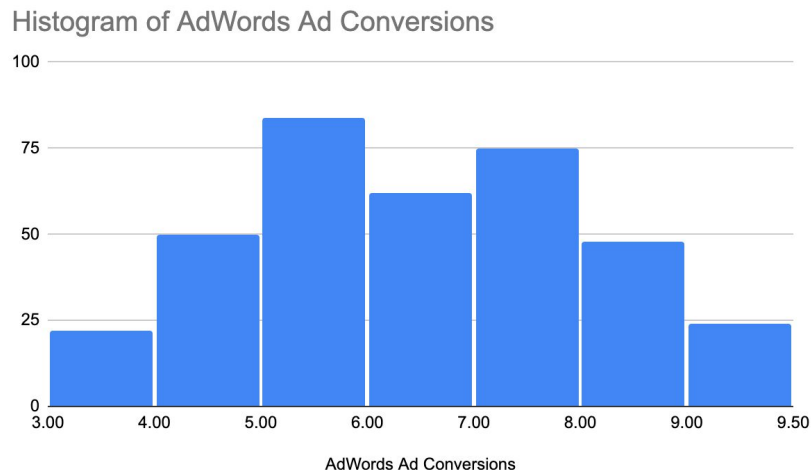
Sample Type

Based on the sample of our data we can visualize both our variables of interest – clicks and conversions data. It gives a good idea of the distribution of our clicks vs conversions.

Histogram of your clicks data:



Histogram of conversions data:



Sample Type

Is the Shape of Sample Data Normal? We can answer this question by looking at the histogram and observing it for meeting the conditions of a normal distribution.

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: Facebook Click-Through Rate, Facebook Conversion Rate, Facebook Cost Per Click

Discrete: Facebook Ad Views, Facebook Ad Clicks, Facebook Ad Conversions

Qualitative:

Nominal: N/A

Ordinal: Facebook Ad Campaign

End of Section 2

Question and Hypothesis

In order to properly conduct our analysis we need to define a question and hypothesis statement.

Question: Is there a difference between Facebook platform and Adware platform?

Hypothesis: Our number of conversions will be greater if we advertise on Facebook rather than AdWords

Comparing Facebook and Adware Platforms

Comparing the Facebook and Adware Platforms

Hypothesis: Our number of conversions will be greater if we advertise on Facebook rather than AdWords

Independent Variable: Facebook and AdWords

Dependent Variables: Facebooks Ad Conversions and AdWords Ad Conversions

Mean # of Facebook Conversions: 11.74246575

Mean # of AdWords Conversions: 5.980821918

Alpha: 0.05

p-value for t-Test: 0.00

H0: There is no significant difference between Facebook Ad Conversions and AdWords Ad Conversions

H1: There is a significant difference between Facebook Ad Conversions and AdWords Ad Conversions

Conclusions: Based on our conclusiong there is a significant difference between Facebook Ad Conversions and AdWords Ad Conversions.
Therefore, we reject the null hypothesis.

Question and Hypothesis

What is your independent variable? Facebook and AdWords platform

What is your dependent variable? Facebook Ad Conversions and AdWords Ad Conversions

Running a Test

Mean number of Facebook conversions: 11.74246575

Mean number of Adware conversions: 5.980821918

p-Value: 0.00

Hypothesis

After running the test, was your hypothesis proven correct?

Our findings support the alternative hypothesis.

Based on our conclusion there is a significant difference between Facebook Ad Conversions and AdWords Ad Conversions. Therefore, we reject the null hypothesis.

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:

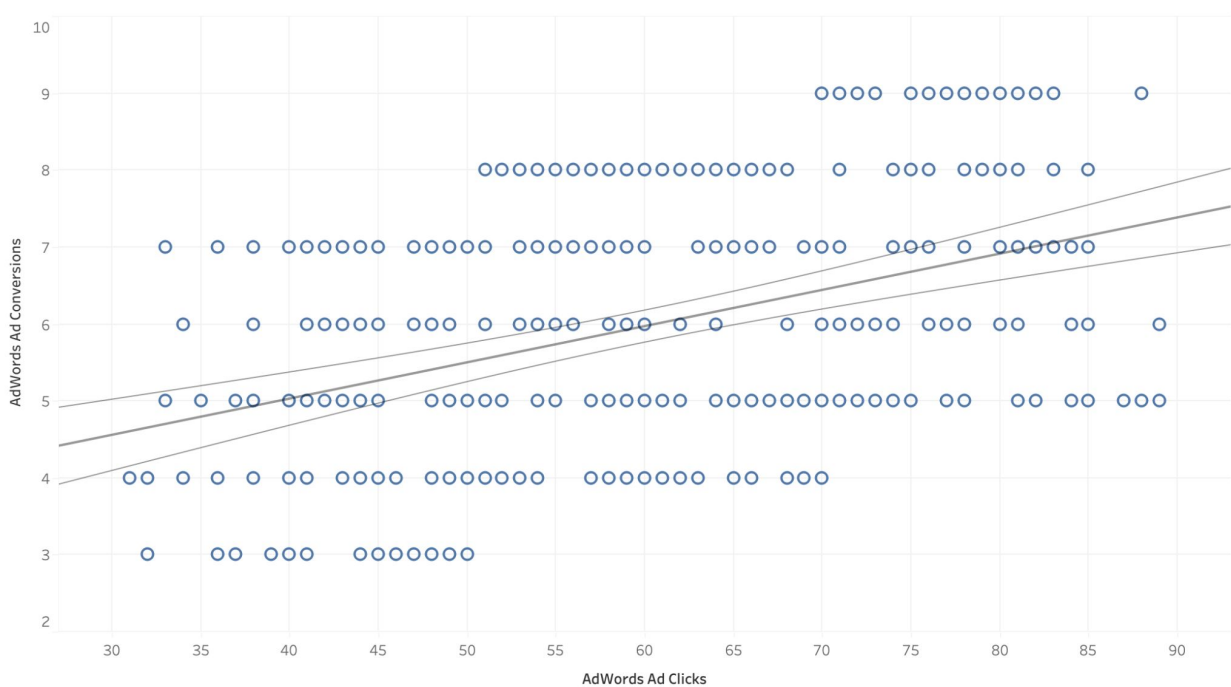
Which model makes the most sense to use and why?

The model used for our analysis is the simple linear regression model. We choose this model because the data meets the assumption:

- Satisfies Independence assumption;
- Satisfies Linearity assumption;
- Satisfies Homogeneity of Variance assumption;
- Satisfies Minimum Sample Size of 20 assumption; and
- Satisfies the Normal distribution assumption

Modeling

The visualization below shows our model:



End of Section 4

A solid teal-colored horizontal bar spanning the entire width of the slide, located at the bottom.

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?

The final insight we derived from our analysis and model are as such:

1. Facebook Ads are better than AdWords in driving conversions up
2. 78% of our data is explained by our model which is a pretty high confidence interval.
3. There is a significant relationship between Facebook Ads and Facebook Conversions as explained by model.

Recommendations:

1. Clicks are not sufficient to accurately predict conversions. We can incorporate other variables such as Impressions, Engagement amongst other relevant variables.
2. Marketing efforts should be implemented such email marketing campaign to ensure that the conversions happen

Future Looking Statement:

1. A simplified approach towards collecting and analyzing data could be proof more efficient – an analytics platform such as facebook ad manager, google ads can provide a one-stop shop for these type of analysis.