

# Predicting Ad Conversion Rates: A Comparative Study of Facebook and AdWords Platforms

Statistical Analysis results

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# 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 gauge how spread out the data is. Below, enter the standard deviation of the provided data.

Standard Deviation of Clicks: 14.348

Standard Deviation of Conversions: 1.626

# 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.

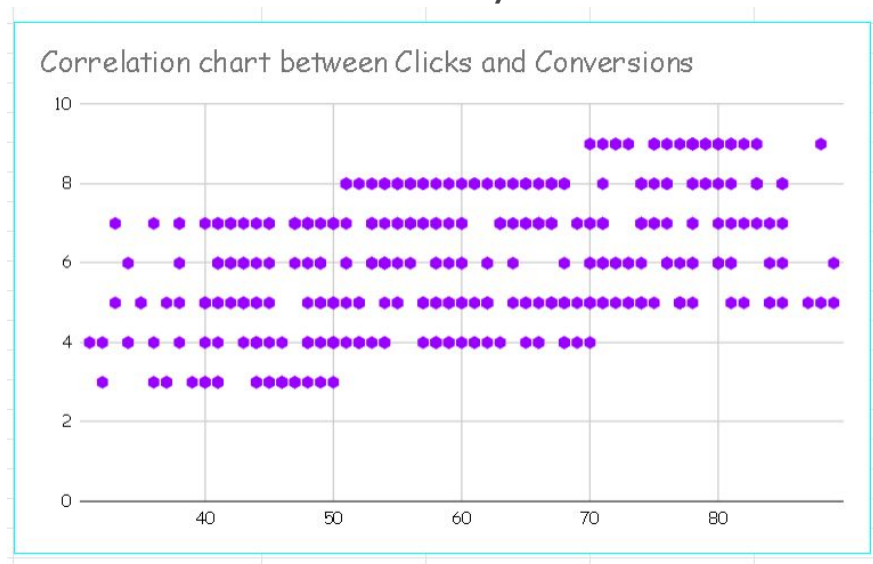
	Number of AdWords Conversions by Grouping for 2019" in cell			
Number of Conversions.	1 to 5	6 to 10	11 to 15	16+
Number of occurrences	156	209	0	0

# 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: 0.448

Scatter Plot of your data:

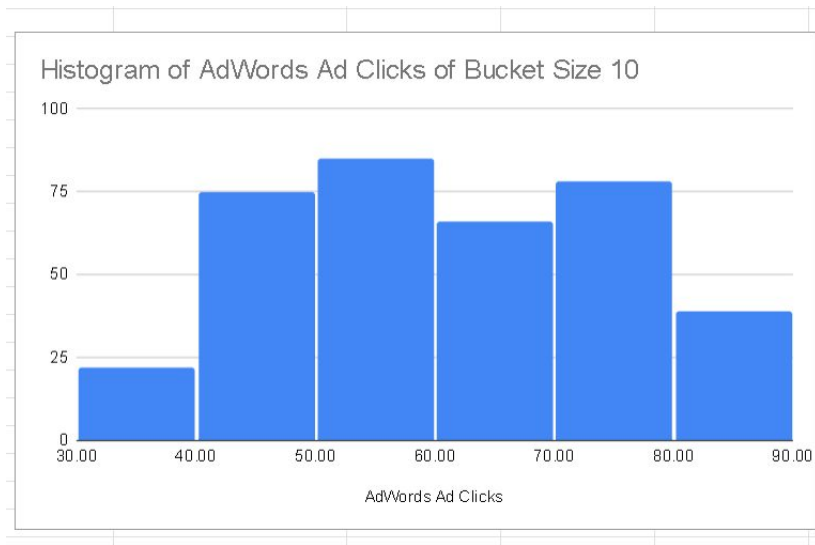


# Sample Type

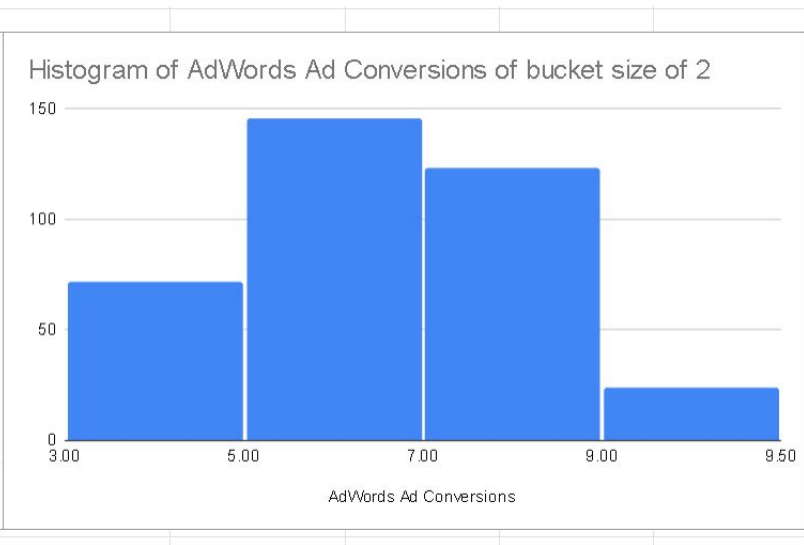
It's important to understand the sample you're using in your analysis. Fill in the information below about the sample you have received:

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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? Yes The Graph tend to have a normal distribution

Does the conversions data have a normal distribution? No, The Graph tend to resemble Bell shape.



# 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, AdWord Conversion Rate

Discrete: AdWords Ad View, AdWords Ad Clicks, AdWords Ad Conversions, AdWords Cost per click

Qualitative:

Nominal: Technically none of the AdWords fit into this category

Ordinal: Technically none of the AdWords fit into this category

# 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 statistically significant difference in the number of conversions between the Facebook and AdWords platforms

# 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?

The advertising platform (Facebook or AdWords)

What is your dependent variable?

The 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: 11.742

Mean number of Adware conversions: 5.981

p-Value: 0

# Hypothesis

After running the test, was your hypothesis proven correct?

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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?

The hypothesis was proven correct. There is a statistically significant difference in the number of conversions between the Facebook and AdWords platforms.

The findings support the alternative hypothesis (H1), as the p-value is less than the alpha level of 0.05.

Conclusion: There is a statistically significant difference in the number of conversions between the Facebook and AdWords platforms, in line with what the hypothesis predicted. Specifically, the mean number of conversions is higher for AdWords compared to Facebook.

# Determining a Model

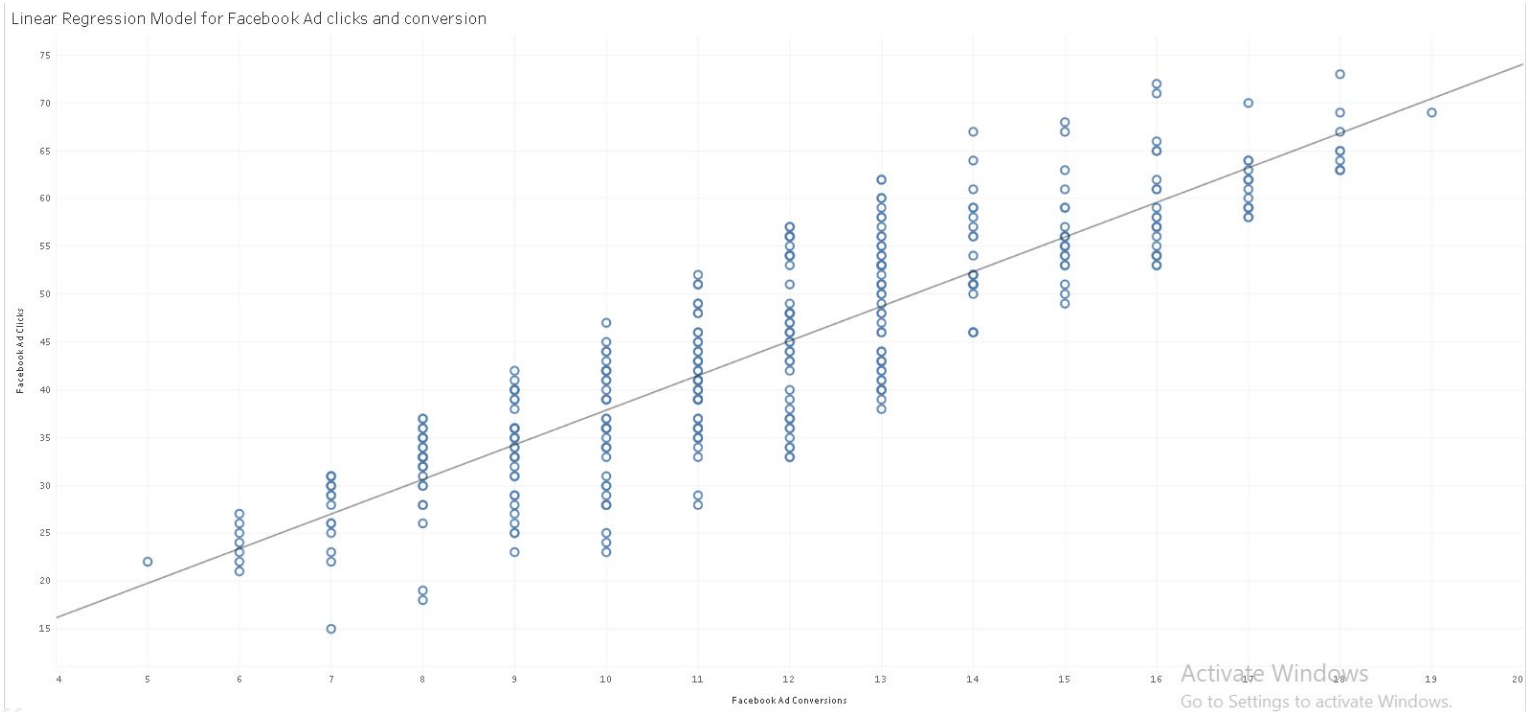
Based off what you know so far, you'll need to determine if your data meets the assumptions for a chosen model. Including:

The Simple Linear Regression model is the most appropriate for this analysis. It aligns well with our objective to predict Facebook Ad Conversions based on Facebook Ad Clicks, both of which are quantitative variables. The model's assumptions of linearity, independence, and normality are met, and it offers ease of interpretation

# Modeling

Linear Regression Equation : Facebook Ad Clicks =  $3.61883 \times \text{Facebook Ad Conversions} + 1.64525$

R-Squared: 0.769258 and P-value: < 0.0001



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# Modeling

The R square value of 0.769 suggests a relatively strong positive relationship between the number of Facebook Ad Clicks and Facebook Ad Conversions. About 76.9% of the variability in Ad Clicks can be explained by the number of Ad Conversions.

A P-value less than 0.05 usually indicates a statistically significant relationship. In your case, it's far below this threshold, reinforcing the idea that your model is statistically significant.

Based on the Simple Linear Regression model, the equation is :

Facebook Ad Clicks =  $3.61883 \times \text{Facebook Ad Conversions} + 1.64525$ .

we can predict the expected number of Facebook Ad Clicks for 50 Facebook Ad Conversions. After plugging the value into the equation, we get an expected 182.59 Facebook Ad Clicks for 50 Facebook Ad Conversions.



# Final Insights

## What Did We Learn?

- Platform Efficiency: Our initial analysis demonstrated that Facebook Ads are more effective at generating conversions than AdWords Ads.
- Predictive Model: The model has a high R square value (0.769258), indicating a strong correlation between clicks and conversions on the Facebook platform.
- Statistical Significance: The p-value of less than 0.0001 confirms that the model is statistically significant, implying that the results are reliable and not due to random chance.
- Equation for Prediction: Facebook Ad Clicks= $3.61883 \times \text{Facebook Ad Conversions} + 1.64525$  can be used for future predictions.

## Recommendation:

- Allocate More Budget to Facebook Ads: Given their higher effectiveness in terms of conversions, it would be wise to allocate a larger portion of the advertising budget to Facebook Ads.
- Utilize the Predictive Model: Use the regression model to forecast conversion rates based on planned or expected clicks. This will aid in setting more accurate KPIs and expectations.
- A/B Testing: To further optimize, consider running A/B tests on different types of Facebook Ads to understand which are the most effective in terms of conversions.
- Retargeting: Given the strong correlation between clicks and conversions, implementing a retargeting strategy could maximize conversions from existing clicks.