Analysis of campaigns.

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Section 1

Comparing the data using measures of center

First: The number of clicks data.

Facebook platform:
Mean: 44.04
Median: 43
Mode: 36

Adwards platform:
Mean: 60.38
Median: 60
Mode: 78

Comparing the data using measures of center

Secound: The number of conversions.

Facebook platform:
Mean: 11.7
Median: 12
Mode: 13

Adwards platform:
Mean: 5.9
Median: 6
Mode: 5

Standard Deviation

Determining variance in data to understand the spread of all data points in the data set.

Standard Deviation of Clicks: 14.3

Standard Deviation of Conversions: 1.6

Clicks and conversions Frequency Tables.

Understanding how often something happens is important to understanding trends and patterns in your data

Frequency	AdWords Ad Clicks	AdWords Ad Conversions
<6	0	156
6_10	0	209
10_15	0	0
>15	365	0

| Frequency	Facebook Ad Clicks	Facebook Ad Conversions
<6	0	1
6_10	0	86
10_15	0	210
>15	365	68

The relationship between Ad clicks and Conversions in Adwards platform.

Correlation coefficient: .447
So it's a weak relationship

The relationship between Adwards Ad clicks and Conversions
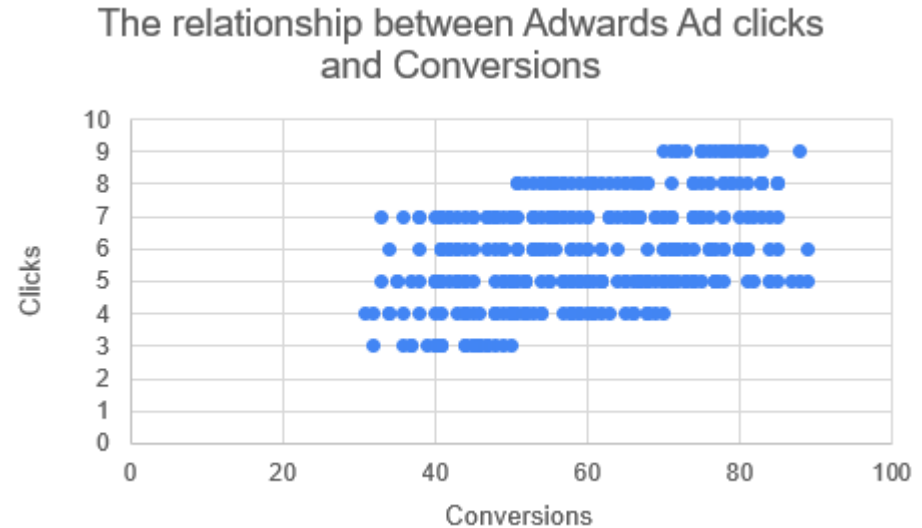
The relationship between Ad clicks and Conversions in Facebook platform.

Correlation coefficient: .87
So it's a strong relationship

The relationship between Facebook Ad clicks and Conversions
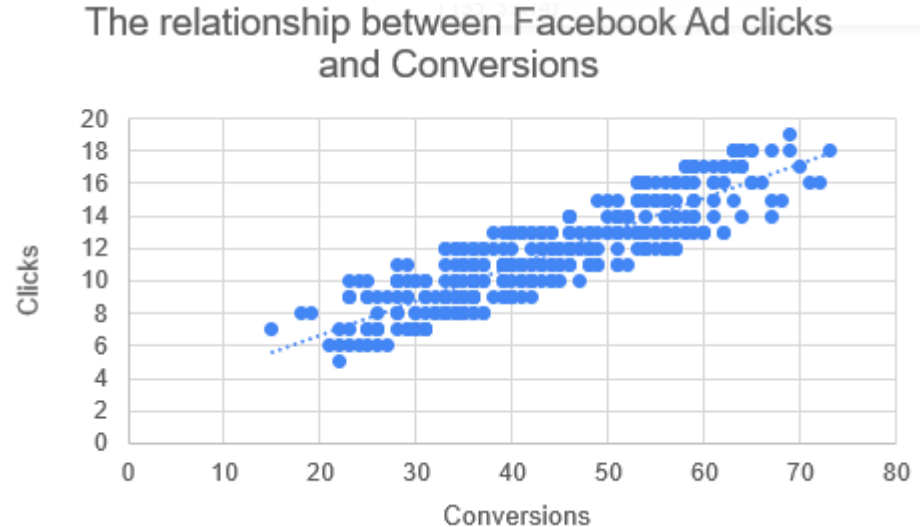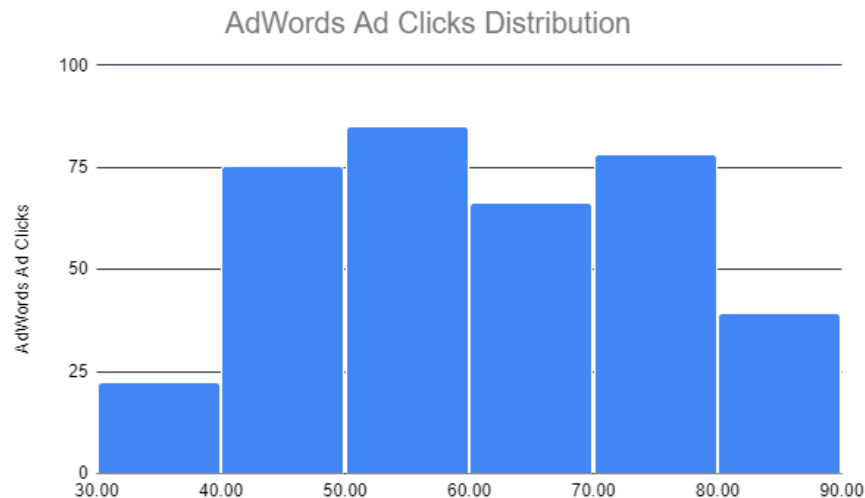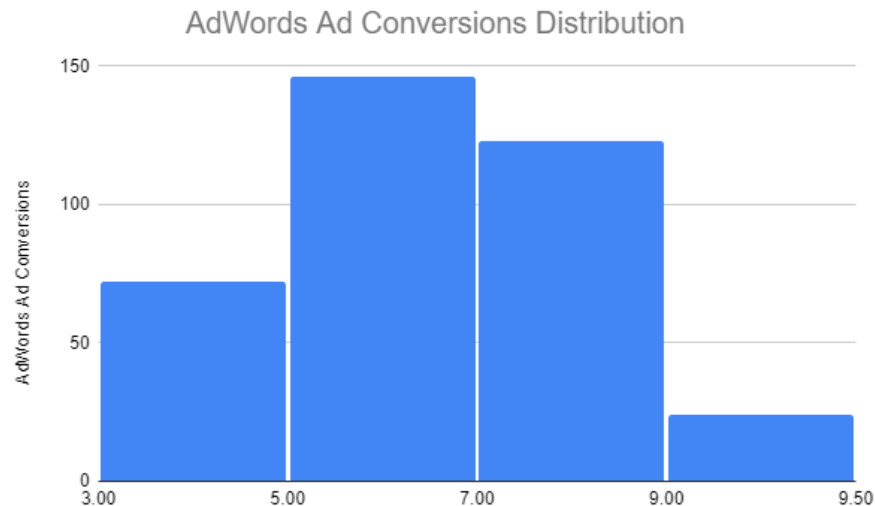
End of Section 1

Sample Type

It's important to understand the sample's distribution.
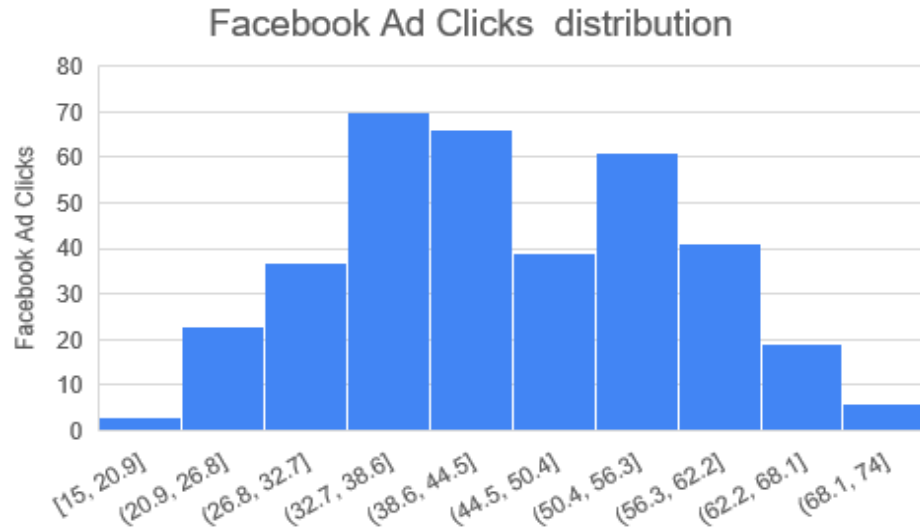
Histogram of Ad clicks data:

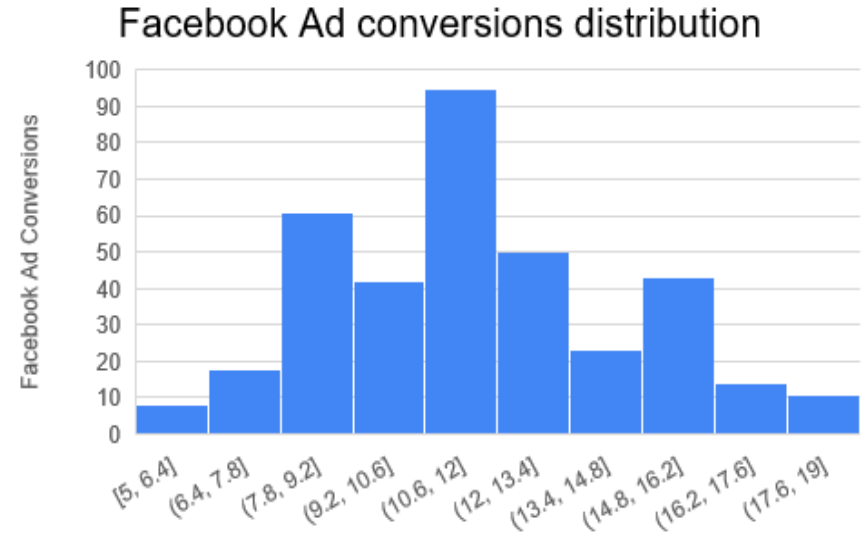Histogram of Ad conversions data:

Sample Type

Histogram of Ad clicks data:

Histogram of Ad conversions data:

From the charts:

The Ad clicks data have a normal distribution.

The Ad conversions data have a normal distribution.

End of Section 2

Question and Hypothesis

Our number of conversions will be greater if we advertise on platform Facebook rather than platform AdWords.
H0 there is no significant difference between number of conversions from platform Facebook and platform AdWords.
H1 there is a significant difference between number of conversions from platform Facebook and platform AdWords.

Running a Test

Mean number of Facebook conversions: 11.7

Mean number of Adware conversions: 5.9

p-Value: .00

Hypothesis

The p-value<Alpha;
So we reject the null hypothesis H0 and accept the alternative hypothesis H1 as there is a significant difference between conversions from Facebook and from platform AdWords.

End of Section 3

Determining a Model to predict the Facebook Ad conversions from Facebook Ad clicks.

Simple linear regression is the best model as the independent variable(Facebook Ad clicks) is quantitive, the dependent variable (Facebook Ad conversions) also quantitive, finally the purpose of this model is predicting the dependent variable using the independint variable.

Also we choose linear regreshon For its assumptions:

- Linearity: There is a linear relationship between the independent variable(Facebook Ad clicks), and the dependent variable (Facebook Ad conversions) as shown in the 19th slide.
- The minimum sample size is 20 in the model: and there is 365 observation in the data
- Normality: the data is normal enough as it appears in the previous section.
- Homogeneity of the variance: The Facebook Ad clicks variance= 147 and the Facebook Ad conversions variance = 8 which may decrease the prediction accuracy.
- Independence: Every observation is independent of every other.

Modeling

A visualization of the model.

Facebook Ad Conversions prediction
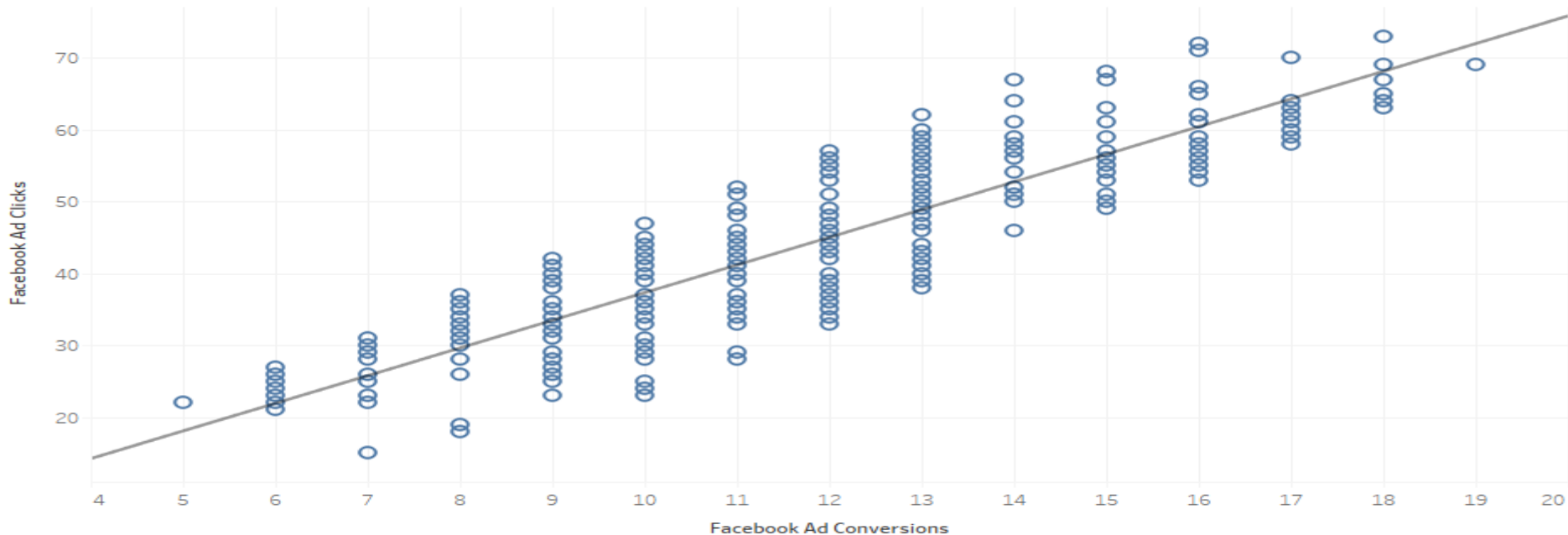
From the chart when there is 50 Facebook Ad clicks we expect 13 Facebook Ad conversions.

End of Section 4

Final Insights

There is a huge difference between the Ad clicks on Adward platform and Ad conversions on Adward platform:

- Mean: 60.38 for Ad clicks and becomes 5.9 for Ad conversions.
- Median: 60 Ad clicks and becomes 6 for Ad conversions.
- Mode: 78 Ad clicks and becomes 5 for Ad conversions.

That means there are many people who don't complete this step and it's a problem.

Final Insights

On the other hand for the Facebook platform, the Ad clicks are fewer than Adward platform but Ad conversions Facebook platform are much higher than Adward platform:

- Mean: 44 for Ad clicks and become 11.7 for Ad conversions.

- Median: 43 Ad clicks and becomes 12 for Ad conversions.

- Mode: 36 Ad clicks and becomes 13 for Ad conversions.

So it's recommended to advertise on the Facebook platform.

Final Insights

Also, the variance and standard deviation of Ad click on the Adward platform are much higher Ad conversions on Adward platform which mean Ad conversions are more balanced.

The relationship between Ad clicks and Conversions is weak in Adwards platform and strong in Facebook platform.

There is a significant difference between conversions from Facebook and from the platform AdWords.

Simple linear regression is a good model to predict the Facebook Ad clicks using Facebook Ad conversions as the dependent variable.