Analysis of Marketing A/B Testing

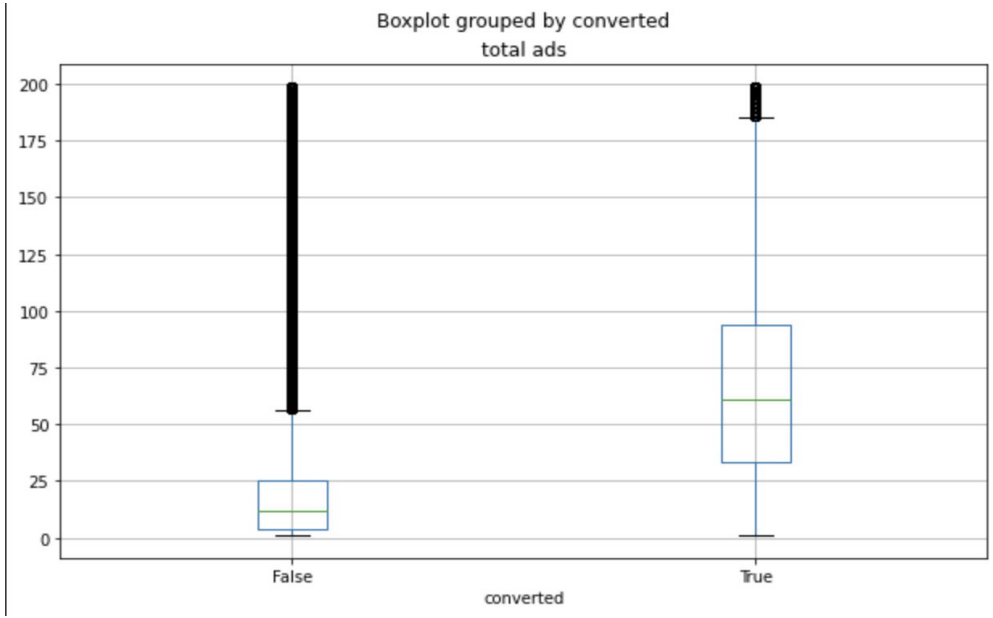
Overview and problem statement

- A marketing company ran an A/B test experiment.
- The goal is to determine if
  1. Number of ads people see, contribute to conversion?
  2. At what day, people watch the highest number of ads?

Data analyzed

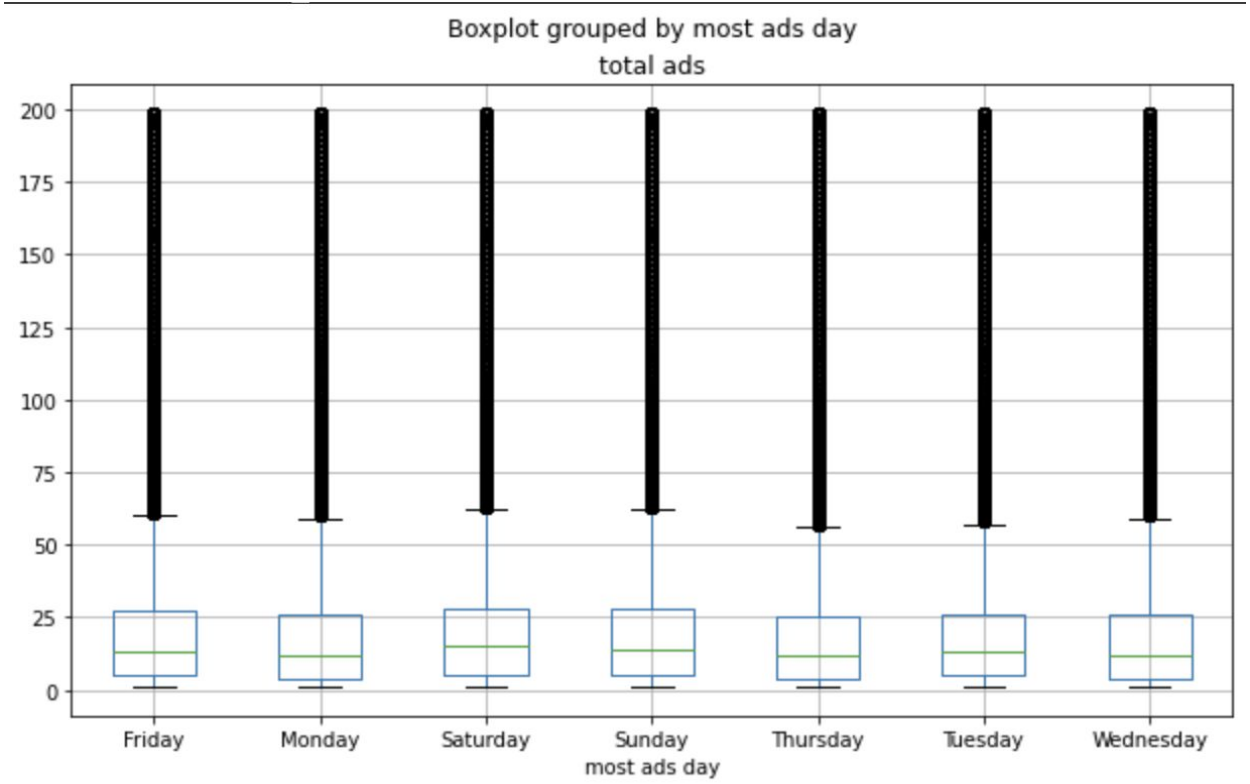
- The data comes from Kaggle and contains 588101 observations and 6 variables.
- Data includes User id, Test group, Converted, Total ads, Amount of ads seen by person, most ads day, Most ads hour.

Statistically significant difference in number of ads seen between people converted and people not converted:



- With 95% confidence, people who have not converted have seen ads on average between 46.15 and 47.63 lesser than converted.
- Number of ads shown to the user is contributing to conversion.

Statistically significant difference in number of ads seen between Monday and Sunday:



- From the plot, there is no difference in number of ads seen on each day.

Statistically significant difference in number of ads seen between Monday and Sunday:

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The difference in means at the 95% confidence interval (two-tail) is between -0.2934234847556321 and 0.2587093825565144.
The difference in means at the 95% confidence interval (two-tail) is between -0.5940419005567189 and -0.041138824851663425.
The difference in means at the 95% confidence interval (two-tail) is between -1.554350088385521 and -1.0170672232258986.
The difference in means at the 95% confidence interval (two-tail) is between 0.5618897005236144 and 1.1069681095331778.
The difference in means at the 95% confidence interval (two-tail) is between 0.5309262554415146 and 1.0787722985493953.
The difference in means at the 95% confidence interval (two-tail) is between 0.1528587447627981 and 0.6923026817014322.
The difference in means at the 95% confidence interval (two-tail) is between -0.5803241622784039 and -0.02014246093086064.
The difference in means at the 95% confidence interval (two-tail) is between -1.5407367202111335 and -0.9959664892011684.
The difference in means at the 95% confidence interval (two-tail) is between 0.5755558892593595 and 1.1280160229965506.
The difference in means at the 95% confidence interval (two-tail) is between 0.5446108425636926 and 1.099801813626335.
The difference in means at the 95% confidence interval (two-tail) is between 0.16648690562925061 and 0.7133886230340973.
The difference in means at the 95% confidence interval (two-tail) is between -1.2408937101355821 and -0.6953428760674553.
The difference in means at the 95% confidence interval (two-tail) is between 0.8754043244781181 and 1.4286342109870565.
The difference in means at the 95% confidence interval (two-tail) is between 0.8444611682727846 and 1.4004181111265077.
The difference in means at the 95% confidence interval (two-tail) is between 0.4663314346961505 and 1.014010717176462.
The difference in means at the 95% confidence interval (two-tail) is between 1.8513279751620566 and 2.3889471465061556.
The difference in means at the 95% confidence interval (two-tail) is between 1.8203454292149686 and 2.360770436387361.
The difference in means at the 95% confidence interval (two-tail) is between 1.4423365242851454 and 1.9742422137905045.
The difference in means at the 95% confidence interval (two-tail) is between -0.303667562440653 and 0.24450830637477056.
The difference in means at the 95% confidence interval (two-tail) is between -0.6817376401369097 and -0.14195874345565235.
The difference in means at the 95% confidence interval (two-tail) is between -0.6535553457317028 and -0.11098178179497686.
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- With 95% confidence, there is very small difference in number of ads seen in any pair between Monday and Sunday

Conclusion

- Ads shown contributes to Conversion.
- People watch the same number of ads each day and hence the conversions are not attributed to any single day.

Recommendation

- As a next step in the process, examining whether difference between the ads and PSA groups is statistically significant can be done.
- Also, examine how much of the campaign success could be attributed to the ads.

QUESTIONS??

Thank You