

InnerHour - Business Analyst Assignment

The Rocket Fuel case study (attached) analyzes data from an online advertising experiment to determine if the campaign was profitable or not, and how to optimize an advertising campaign.

This assignment requires using Excel, performing hypothesis tests and analyzing regression results. It takes time and has many details but is very similar to what you will encounter trying to answer the real-life question “did our campaign make any money?”.

Please read the “Rocket Fuel” case study that describes the company, the experiment and the data available. Use Excel (or other software) for all of your analyses.

1. Was the experiment randomized properly? A common issue with online experiments is that the users were not properly randomized into test and control groups.
 - a. Calculate the share of users allocated to the control group and report it. Please use 6 decimals after the point. What do you expect this number to be from the case? Does your calculation conform to this result, and if not, why?
 - b. How would you test if the campaign properly randomized consumers into the test and control group?
2. Was the campaign effective in increasing conversion rates? Compare the conversion rates between test and control groups and run (and report) the proper statistical test results.
3. Was the campaign profitable?
 - a. How much more money did TaskBella make by running the campaign?
 - b. What was the cost of the campaign?
 - c. Calculate the ROI from the campaign
4. How did the number of impressions seen by each user influence the effectiveness of advertising?
 - a. Create and attach as exhibit a bar chart of conversion rates as a function of the number of ads displayed to consumers.
 - b. Is there a frequency effect to advertising – does showing more ads increase the probability of conversion?