Project: Analyzing a Market Test

Complete each section. When you are ready, save your file as a PDF document and submit it [here](#).

Step 1: Plan Your Analysis

To perform the correct analysis, you will need to prepare a data set. (250 word limit)
Answer the following questions to help you plan out your analysis:
1. What is the performance metric you'll use to evaluate the results of your test?

    The performance metric that we are assessing is the growth of gross margin.

2. What is the test period?

    The test period was for a period of 12 weeks. It ran from April 29, 2016 to July 21, 2016.

3. At what level (day, week, month, etc.) should the data be aggregated?

    The data should be aggregated at the weekly level.

Step 2: Clean Up Your Data

In this step, you should prepare the data for steps 3 and 4. You should aggregate the transaction data to the appropriate level and filter on the appropriate data ranges. You can assume that there is no missing, incomplete, duplicate, or dirty data. You're ready to move on to the next step when you have weekly transaction data for all stores.

Step 3: Match Treatment and Control Units

In this step, you should create the trend and seasonality variables, and use them along with you other control variable(s) to match two control units to each treatment unit. Note: Calculate the number of transactions per store per week to calculate trend and seasonality.

Apart from trend and seasonality...

1. What control variables should be considered? Note: Only consider variables in the RoundRoastersStore file.

The control variables that I considered were square footage and average monthly sales from the Round Roasters Store file.

I also considered using average weekly transaction amount average quantity sold and average number of invoices with either sandwiches and wine on them.

2. What is the correlation between each potential control variable and your performance metric?

Store	Sq_Ft	Avg Month Sales	Average Weekly Gross Margin
Sq_Ft	1	-0.46	-0.024
Avg Month Sales	-0.046	1	0.99
Average Weekly Gross Margin	-0.024	0.99	1

We ultimately excluded Sq_Ft because it did not correlate with our Average Weekly Gross Margin, while Avg Months Sales did.

3. What control variables will you use to match treatment and control stores?

I used average monthly sales, trend and seasonality as my variables.

4. Please fill out the table below with your treatment and control stores pairs:

Treatment Store	Control Store 1	Control Store 2
1664	12019	12069
1675	9081	1857
1696	12219	7162
1700	7284	7484
1712	7087	1857
2288	1807	1542
2293	3102	7534
2301	11668	7334
2322	8817	1857
2341	1762	2333

Step 4: Analysis and Writeup

Conduct your A/B analysis and create a short report outlining your results and recommendations. (250 words limit)

Answer these questions. Be sure to include visualizations from your analysis:

1. What is your recommendation - Should the company roll out the updated menu to all stores?

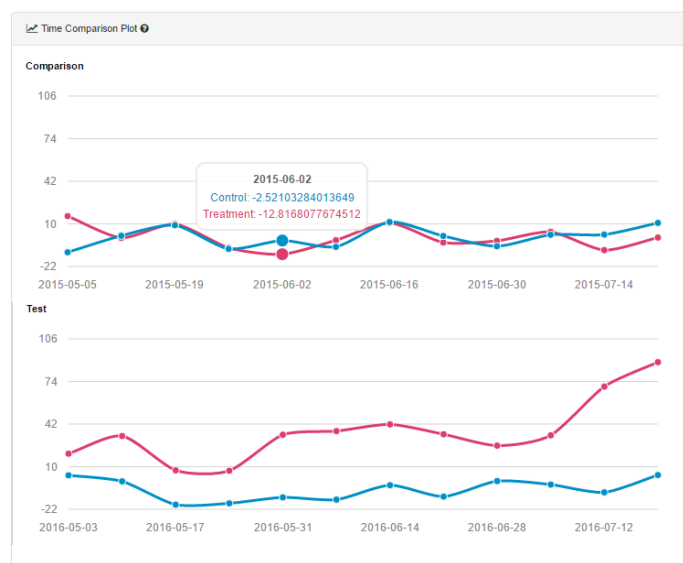   *The company should roll out the updated menu to all stores.*

2. What is the lift from the new menu for West and Central regions (include statistical significance)?

   The lift from the new menu for Central is 47.6% with a 99.6 significance level and for West it is 33% with a 99.2% significance level.
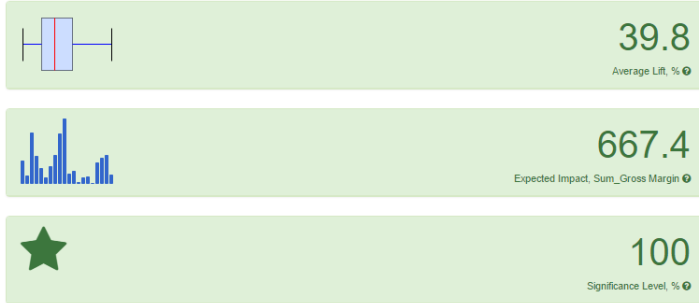
West Comparison
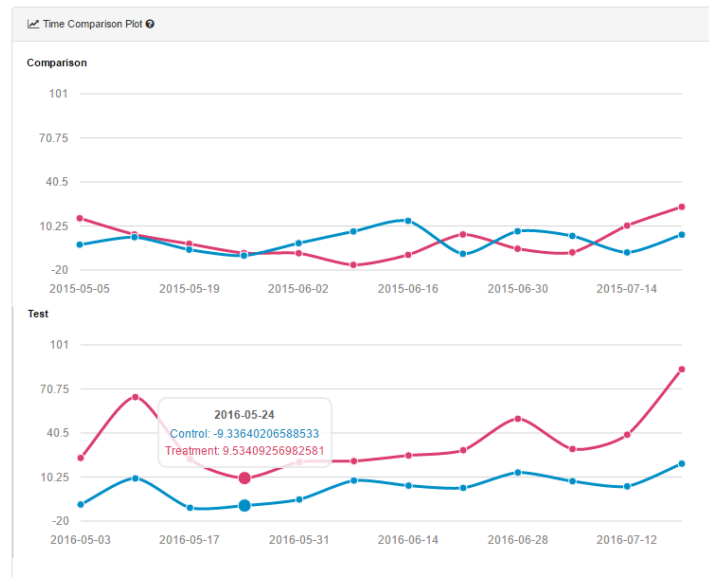
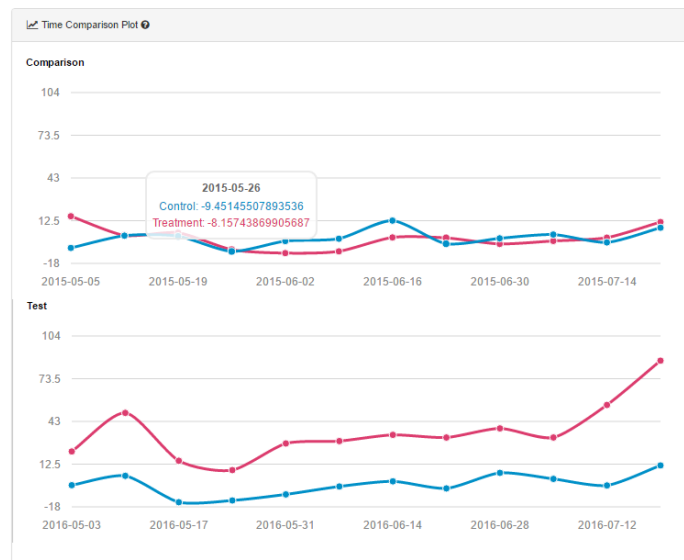*Central Comparison*

3. What is the lift from the new menu overall?

The overall lift is 39.8% and is 667.4 per week in gross margin and 100% significance level.

AB Test Analysis for Sum_Gross Margin

Time: 2017-05-18 09:16:18

	39.8
	Average Lift, %

	667.4
	Expected Impact, Sum_Gross Margin

★	100
	Significance Level, %

Overall Comparison

📈 Time Comparison Plot

Comparison

2015-05-26
Control: -9.45145507893536
Treatment: -8.15743869905687

Test

Before you Submit

Please check your answers against the requirements of the project dictated by the rubric here. Reviewers will use this rubric to grade your project.