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. (500 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?

Answer: The sum of the gross margin, which must be at least 18%, is used as a metric to evaluate whether or not to introduce a gourmet sandwich and limited wine offering.

2. What is the test period?

Answer: The test period is 12 weeks starting from the 29th of April 2016 till the 21st of July 2016.

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

Answer: The aggregation should be run on a weekly basic.

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.

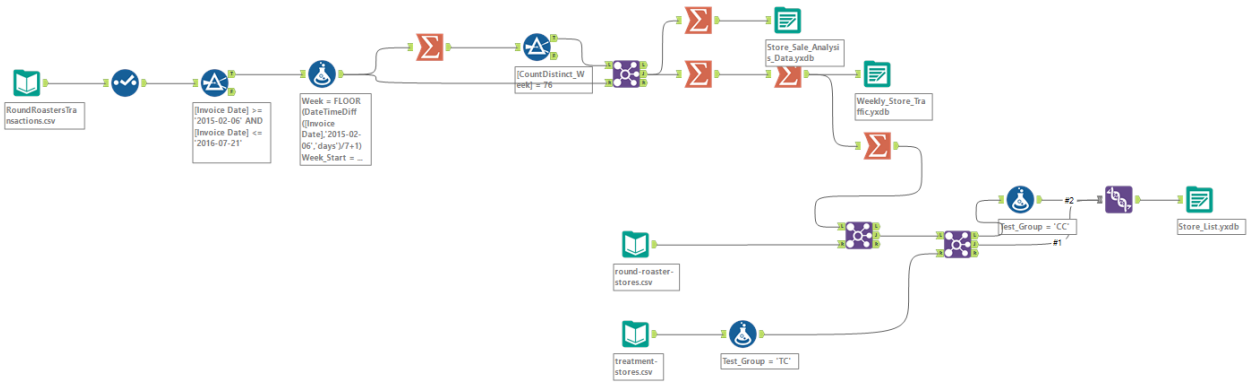

Figure 1: Workflow Data Preparation

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.

Answer: You should consider the variables "Sq_Ft" and "AvgMonthSales".

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

Answer: With help of the Pearson Correlation Analysis, you can see that "AvgMonthSales" has a high positive correlation of 0.99 towards "Sum_Sum_Gross.Margin". On the other side you can see that there is a weak negative correlation between "Sq_Ft" and "Sum_Sum_Gross.Margin".

Pearson Correlation Analyse

Vollständige Correlation Matrix

	Sq_Ft	AvgMonthSales	Sum_Sum_Gross.Margin
Sq_Ft	1.000000	-0.046967	-0.024224
AvgMonthSales	-0.046967	1.000000	0.990978
Sum_Sum_Gross.Margin	-0.024224	0.990978	1.000000

Figure 2 Pearsin Correlation Analysus

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

Answer: "AvgMonthSales" will be used with the "Trend" and "Seasonality" variable when I match treatment and control stores.

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

Treatment Store	Control Store 1	Control Store 2
1664	9081	1857
1664	12069	7484
1675	11568	2114
1675	12219	8562
1696	10018	1964
1696	10468	7584
1700	2409	1508
1700	3102	7384
1712	2333	7284
1712	11368	8212

Table 1 Treatment and Controll Stores

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?

Answer: I would make the recommendation to the company to roll out the new menu since the average change in percent for "Sum_Gross Margin" for the region "West" and for the region "Central" is over the required 18% for marketing expenses. More information sees below.

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

Region West

Answer: For the region "West" you can see a 36.7% improvement/lift at 99.6% significance. The average expected impact per store per week is $496.7.

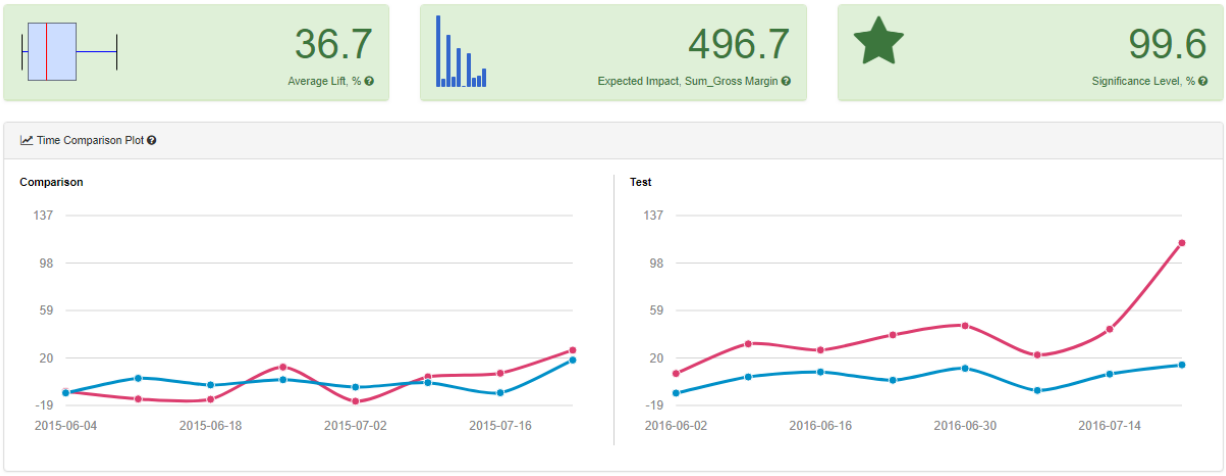

Figure 3 AB Test Analysis - Sum Gross Margin - Region West

Region Central

Answer: For the region "West" you can see a 41% improvement/lift at 99.4% significance. The average expected impact per store per week is $772.9.

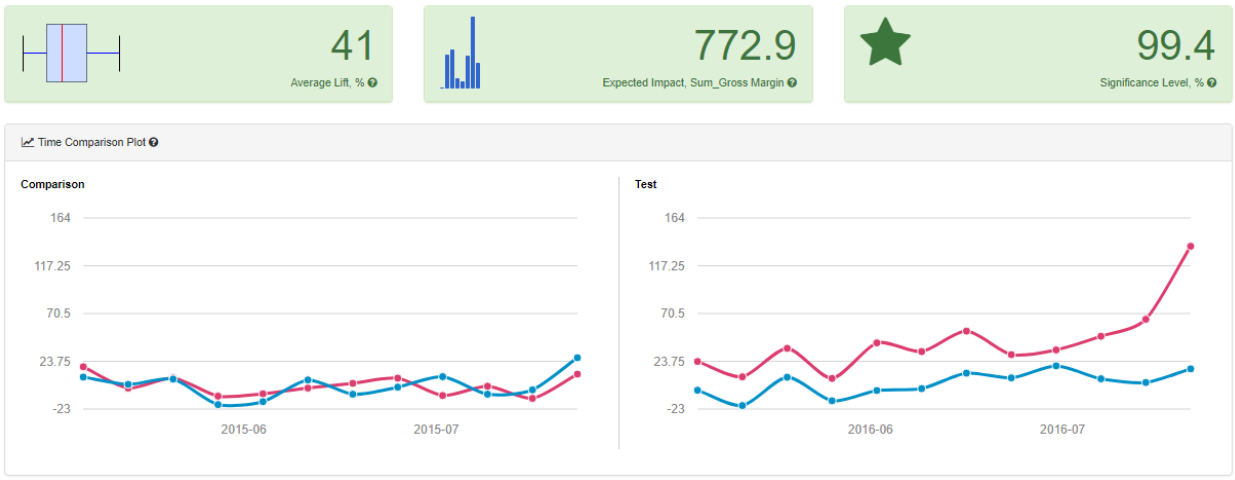

Figure 4 AB Test Analysis - Sum Gross Margin - Region Central

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

Overall

Answer: Overall you can see a 40.5% improvement/lift at 100% significance. The average expected impact per store per week is $711.9.

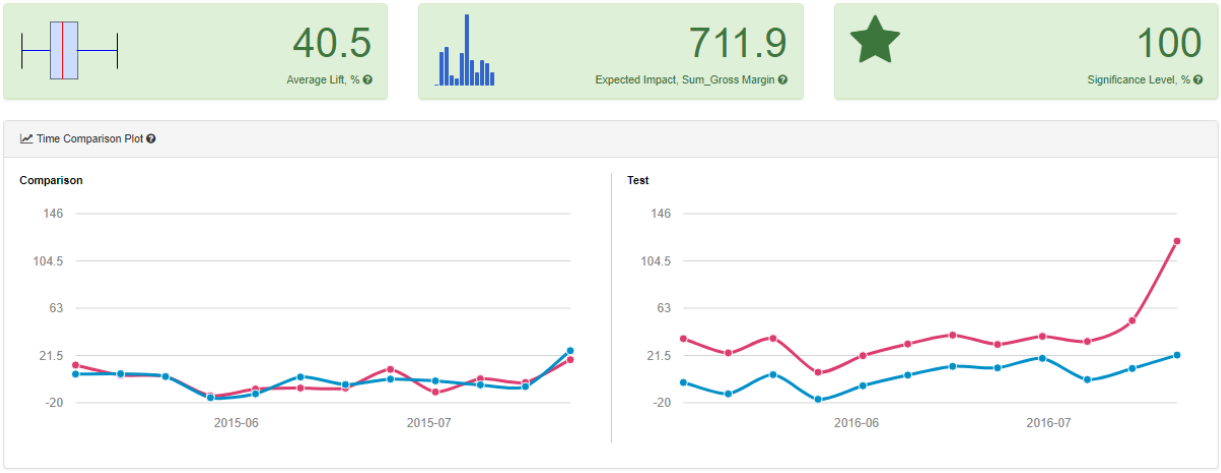

Figure 5 AB Test Analysis - Sum Gross Margin - Overall

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.