Project: Analyzing a Market Test

Plan Your Analysis

1. What is the performance metric you'll use to evaluate the results of your test?

I will use the metric of Gross Margin to evaluate the results of my test.

2. What is the test period?

The test period will be from April 29th, 2016 to July 21st, 2016, and for control the data from February 6th, 2015 to July 21st, 2016.

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

Weekly considering that people usually go to restaurant couple of times a week.

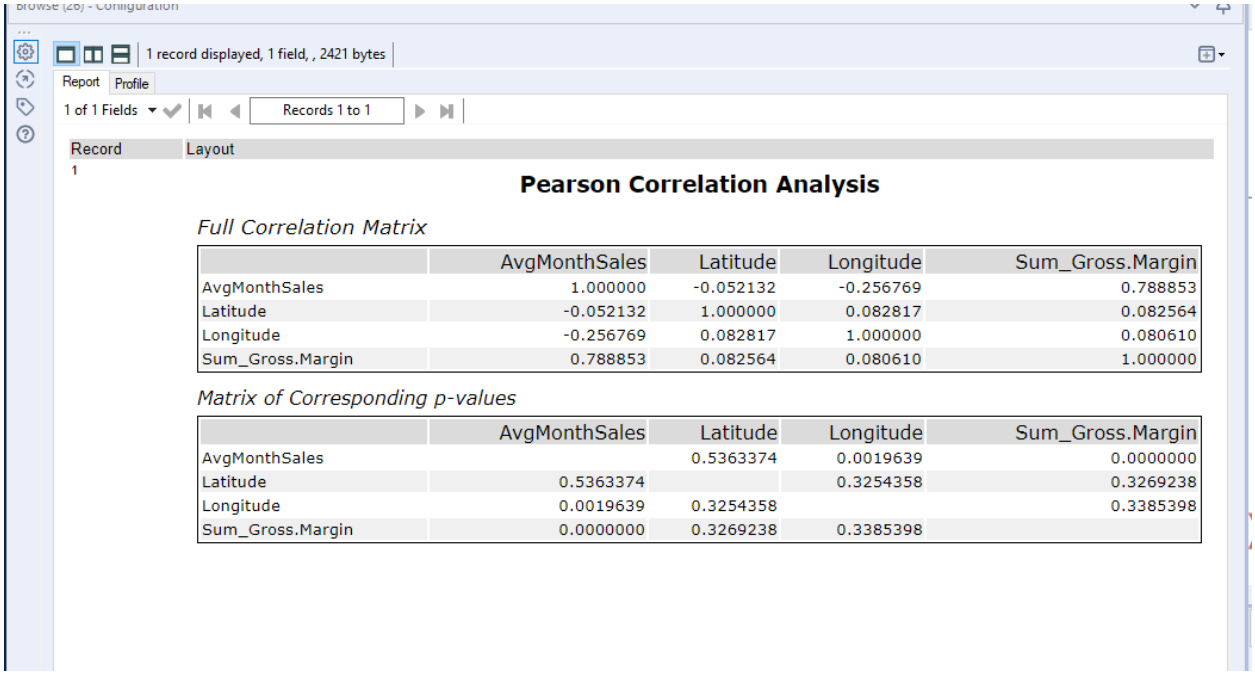
Match Treatment and Control Units

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

The control variables to be considered AvgMonthSales, the unique identifier will be Store ID, also potentially location data from State, Region, Longitude, Latitude, or Timezone as control variables.

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

As it turns out, The Pearson correlation analysis shows that there are positive correlations of the performance metric Gross Margin correlated to the potential control variables as follows AvgMonthSales 0.788853, Latitude 0.082564, and Longitude 0.080610.



	AvgMonthSales	Latitude	Longitude	Sum_Gross.Margin
AvgMonthSales	1.000000	-0.052132	-0.256769	0.788853
Latitude	-0.052132	1.000000	0.082817	0.082564
Longitude	-0.256769	0.082817	1.000000	0.080610
Sum_Gross.Margin	0.788853	0.082564	0.080610	1.000000

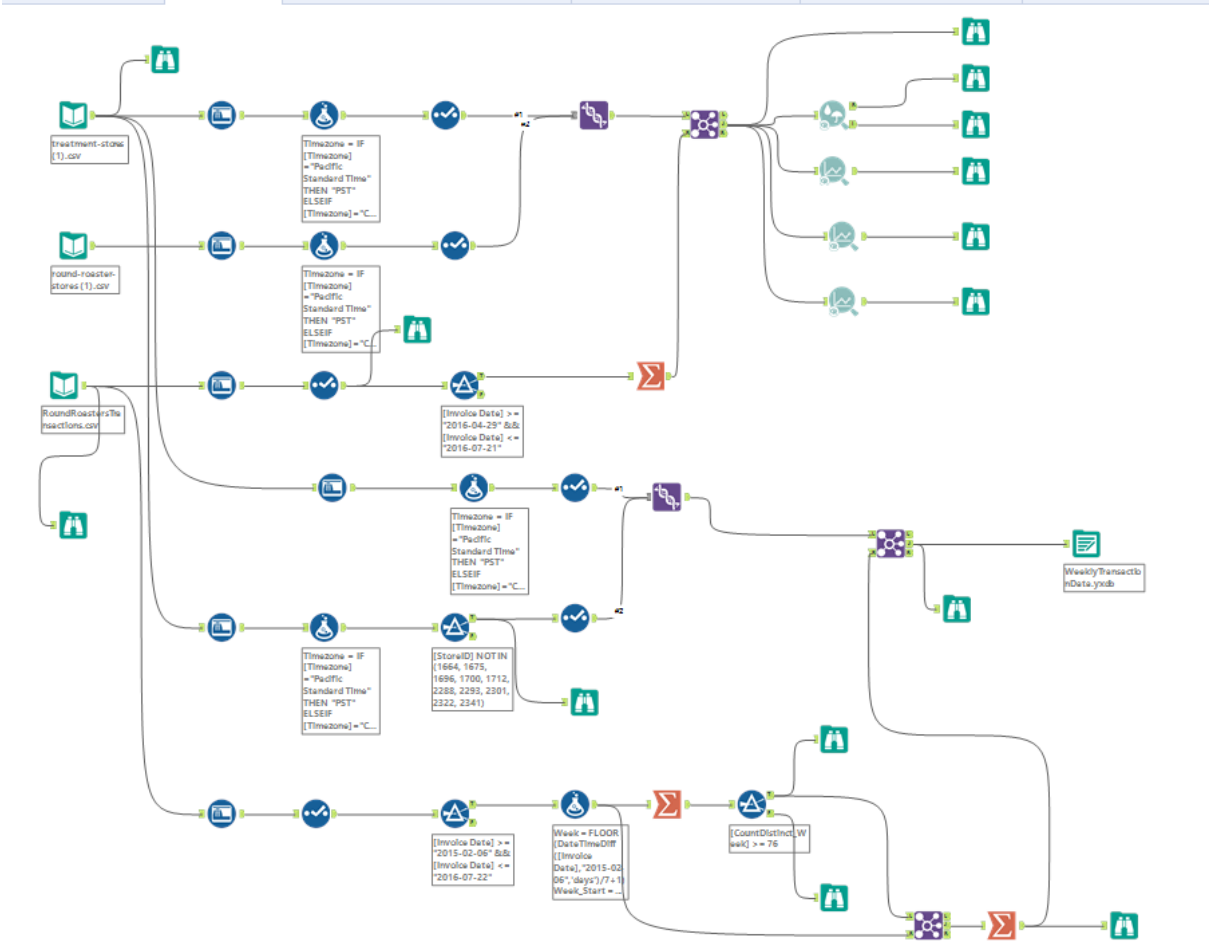
	AvgMonthSales	Latitude	Longitude	Sum_Gross.Margin
AvgMonthSales		0.5363374	0.0019639	0.0000000
Latitude	0.5363374		0.3254358	0.3269238
Longitude	0.0019639	0.3254358		0.3385398
Sum_Gross.Margin	0.0000000	0.3269238	0.3385398	

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

AvgMonthSales and Region will be used.

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

Treatment Store	Control Store 1	Control Store 2
1664	1807	1508
1675	1964	1542
1696	2014	1580
1700	2409	3185
1712	2568	7334
2288	8112	7434
2293	8162	8817
2301	9238	9524
2322	9589	9639
2341	12286	11268



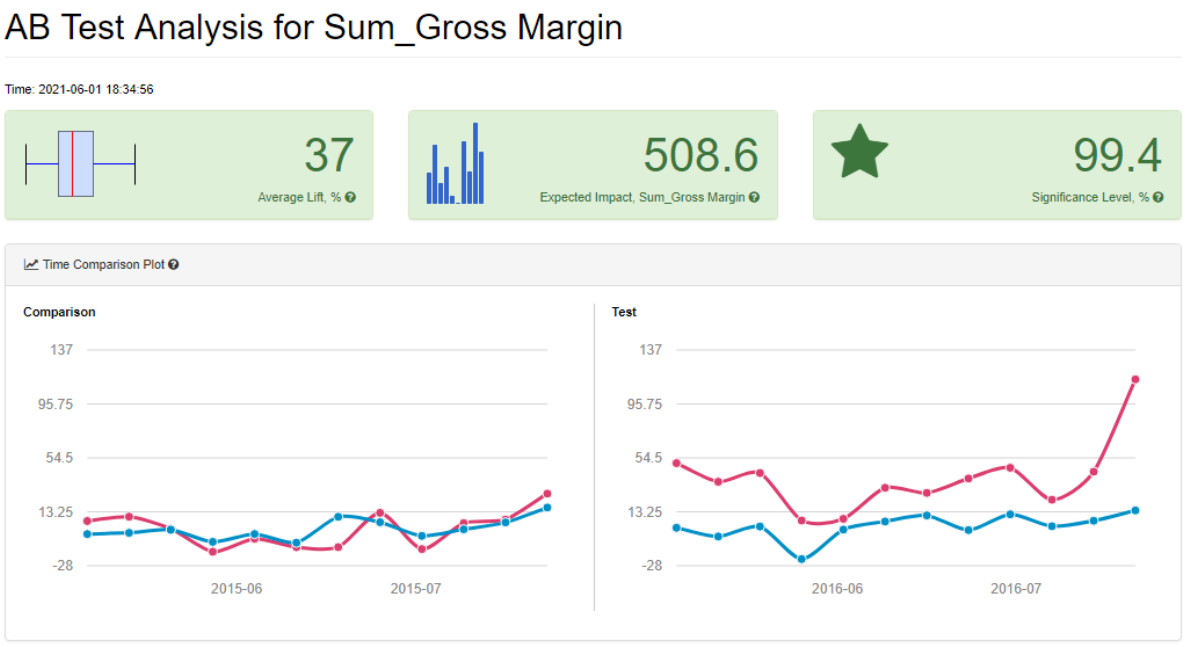
Step 4: Analysis and Writeup

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

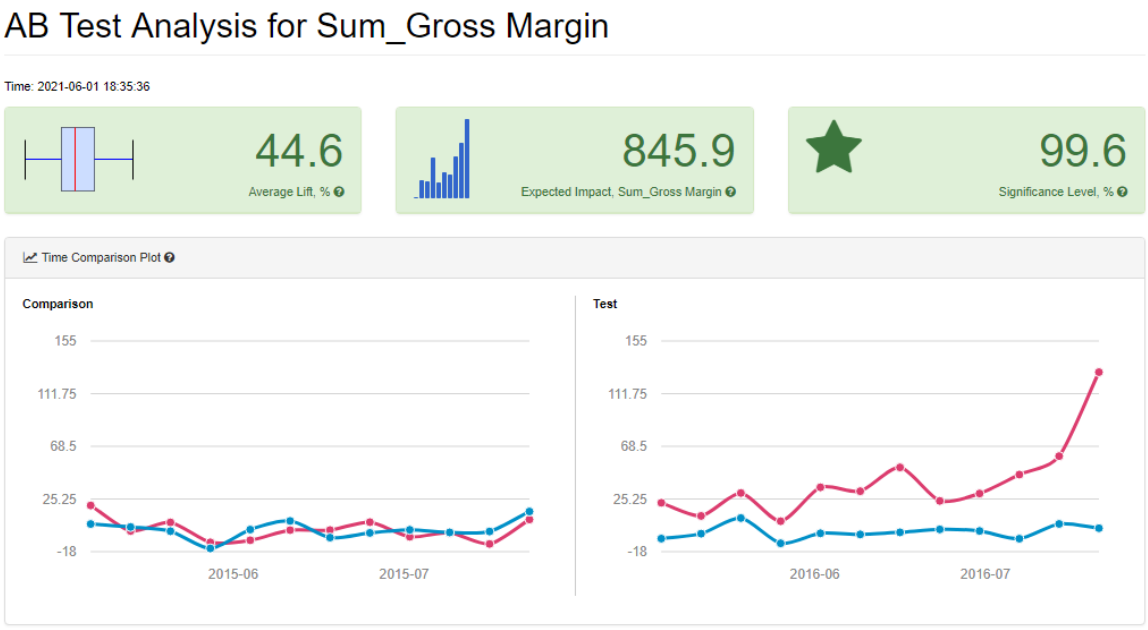
According to the A/B test results, the new menu should be rolled out to all stores, resulting in a profit increase of more than 18 percent which would be more than sufficient to justify an increase in the marketing budget.

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

According to the data, after implementing the new menu in the West region, there would be a 37 percent improvement with a significance of 99.4 percent over the previous menu. The average lift per store per week as a result of the new menu would be equivalent to approximately $508.6 per store per week.

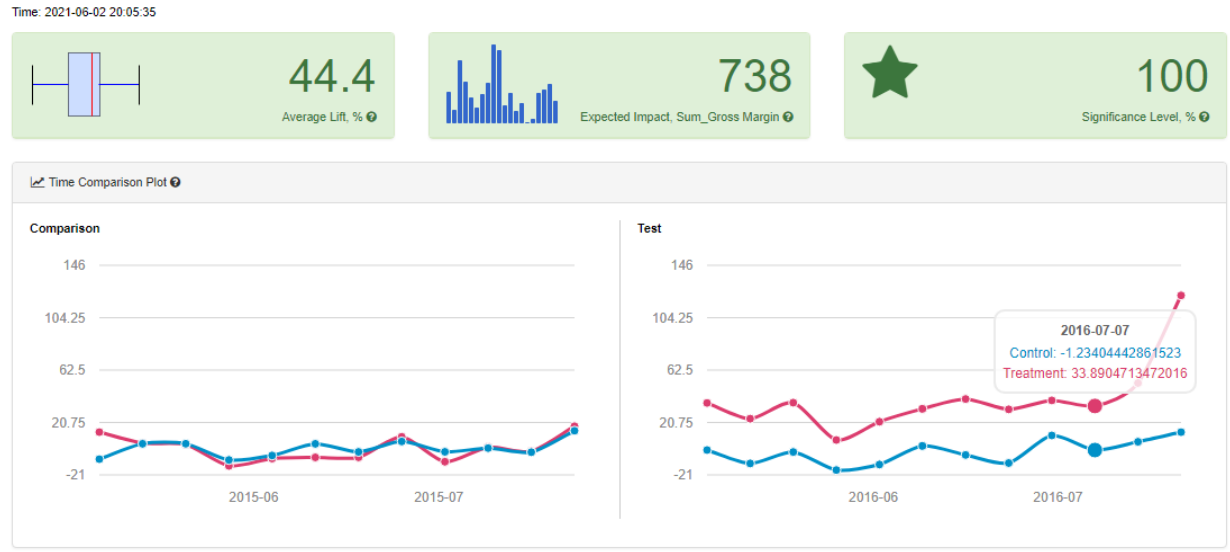


According to the data, after implementing the new menu in the Central region, there would be a 44.6 percent improvement with a significance of 99.6 percent over the previous menu. The average lift per store per week as a result of the new menu would be equivalent to approximately $845.9 per store per week.



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

According to the data, after implementing the new menu overall, there would be a 44.4 percent improvement with a significance of 100 percent over the previous menu. The average lift per store per week as a result of the new menu would be equivalent to approximately $738 per store per week.



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.