

Project: Analyzing a Market Test

Step 1: Plan Your Analysis

1. What is the performance metric you'll use to evaluate the results of your test?
 - a. In order to evaluate whether to introduce the gourmet sandwiches and limited wine offerings, "Sum of Gross margin" will be used as the performance metric to see the sales growth.
2. What is the test period?
 - a. The test period ran for 12 weeks (2016-April-29 to 2016-July-21).
3. At what level (day, week, month, etc.) should the data be aggregated?
 - a. The data should be aggregated at a weekly level.

Step 2: Clean Up Your Data

1. In order to get clean data, "RoundRoastersTransactions" and "RoundRoastersStores" were joined. The test ran for 12 weeks, hence we needed 12 weeks of historical data and 52 weeks to calculate trends. In total, 76 weeks data is used.
2. Three additional files were created.
 - a. Weekly_Store_Traffic
 - b. Store_List
 - c. Store_Sales
3. Week, Week_Start, Week_End, and New_Category were added to calculate weekly_store_traffic.
4. The three data files are used to match control stores and treatment and to calculate sales lift.

Step 3: Match Treatment and Control Units

1. What control variables should be considered? Note: Only consider variables in the RoundRoastersStore file.
 - a. AvgMonthSales should be considered as control variable.
2. What is the correlation between each potential control variable and your performance metric?
 - a. From the Association Analysis tool, AvgMonthSales has the highest correlation of 0.9, while, Sq_Ft has low correlation of -0.3

Pearson Correlation Analysis

Full Correlation Matrix

	Sum_Gross.Margin	Sum_AvgMonthSales	Sq_Ft
Sum_Gross.Margin	1.0000000	0.9146331	0.0064826
Sum_AvgMonthSales	0.9146331	1.0000000	-0.0298687
Sq_Ft	0.0064826	-0.0298687	1.0000000

3. What control variables will you use to match treatment and control stores?
 - a. Trend and Seasonality will be used together with AvgMonthSales to match treatment and control stores.

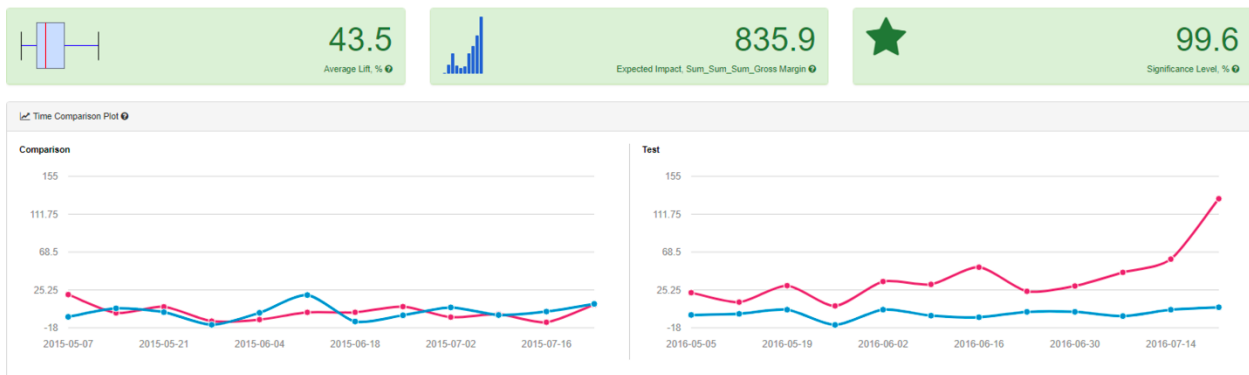
4. Please fill out the table below with your treatment and control stores pairs:

Treatment Store	Control Store 1	Control Store 2
1664	7162	8112
1675	1580	1807
1696	1964	1863
1700	2014	1630
1712	8162	7434
2288	9081	2568
2293	11219	9524
2301	3102	9238
2322	2409	3235
2341	12536	2383

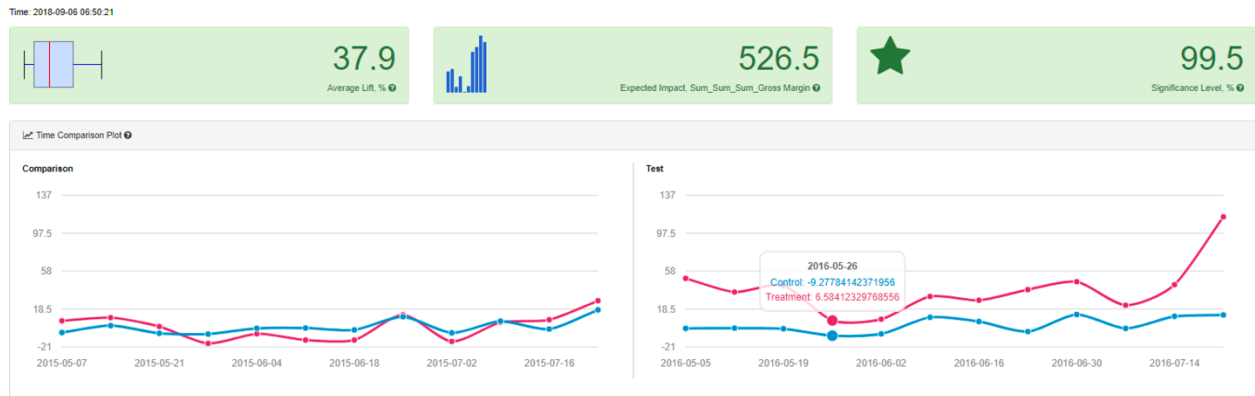
Step 4: Analysis and Writeup

- 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 as there is an increase in profit.
- What is the lift from the new menu for West and Central regions (include statistical significance)?
 - For the Central region, the lift is 43.5% with a statistical significance of 99.6%.

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b. For the West region, the lift is 37.9% with a statistical significance of 99.5%.



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

a. The lift of the new menu overall is 40.7% with a statistical significance of 100%.

