Project: Analyzing a Market Test

Plan Your Analysis

Q1. What is the performance metric you'll use to evaluate the results of your test?

For the performance metric we can take the sum of the gross margin from which we can analyze whether or not to introduce the gourmet sandwiches and limited wine to increase sales for Round Roasters.

Q2. What is the test period?

The period form 29th April 2016 to 21st July 2016 i.e. a time-period of 12 weeks is used as the test period.

Q3. At what level (day, week, month, etc.) should the data be aggregated?

We are aggregating the data at the weekly level.

Clean Up Your Data

To prepare the data for the upcoming steps we first take the union of the RoundRoastersTransactions and round-roaster-stores (1) dataset (provided .csv files). To conduct the A/B testing we are using the additional data of 52 weeks to that of the 12 weeks to as to calculate the seasonality and trend.

In Alteryx we set up the time period of 12 weeks instead of 6 weeks because the test was conducted for 12 weeks. Also, we have introduced the new fields for the A/B testing purposes these are: week, week_begin, week_end, NewProdFlag these will be used to in calculating the weekly store traffic and sales. Once, all this is done then we introduce the treatment-stores (1) to form treatment store and control stores.

Match Treatment and Control Units

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

The control variables from the RoundRoastersStore csv file is AvgMonthSales and Sq_Feet.

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

From the below report we can deduce that AvgMonthSales has a correlation coefficient of 0.990978 with the Sum_Sum_Gross.Margin on the other hand Sq_Ft has the correlation coefficient of -0.024224 with Sum_Sum_Gross.Margin

Pearson Correlation Analysis

Full Correlation Matrix

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

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

Based on the correlation Analysis we can say that only AvgMonthSales will be used to match treatment and control stores.

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

Treatment Store	Control Store 1	Control Store 2
1664	1964	8562
1675	1807	7584
1696	1863	7334
1700	7037	1508
1712	8162	7434
2288	2568	9081
2293	12219	9639
2301	11668	12019
2322	9238	9388
2241	2572	3102

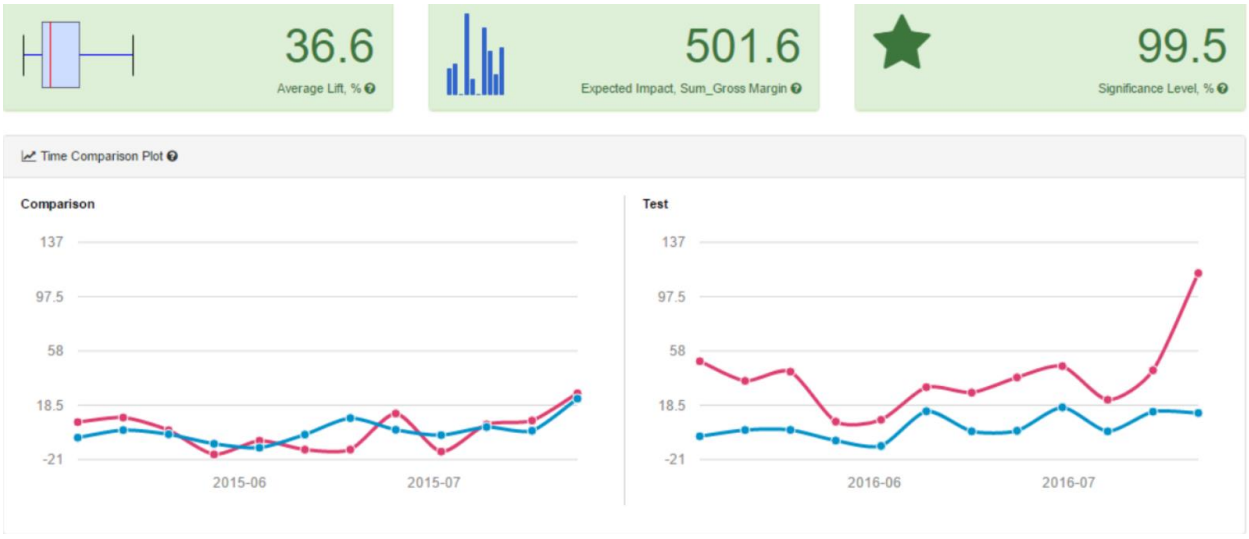
Analysis and Writeup

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

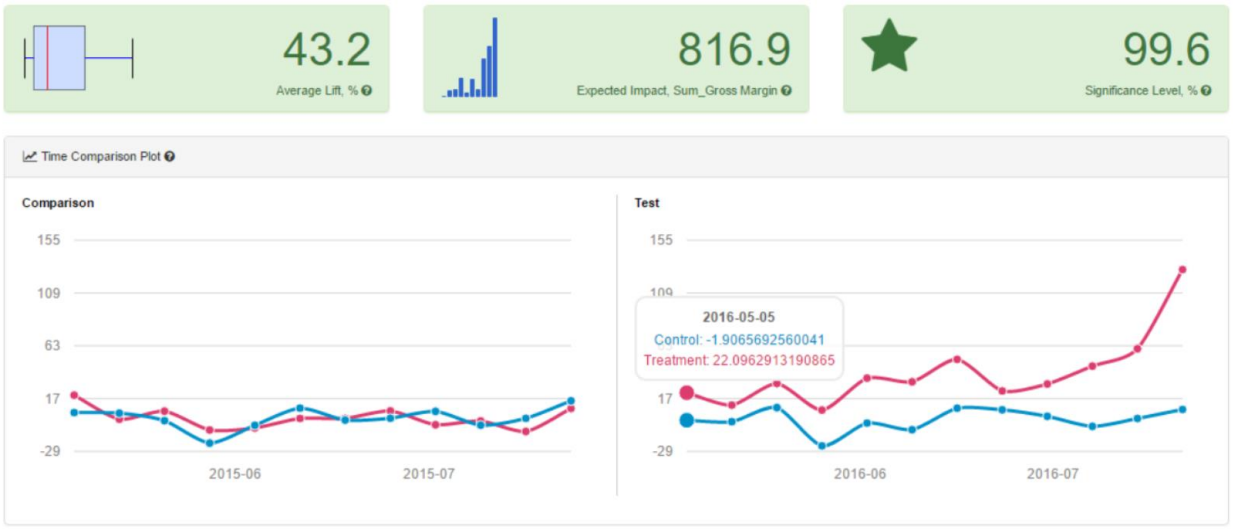
The company should update its menu at all the stores as the profit margin has increased by more than 18%.

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

The lift for the west region is 36.6% with the statistical significance of 99.5% (shown below)

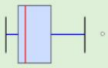


The lift for the central region is 43.2% with the statistical significance of 99.6% (shown below)



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

The lift for the central region is 39.9% with the statistical significance of 100% (shown below)



39.9

Average Lift, %

659.2

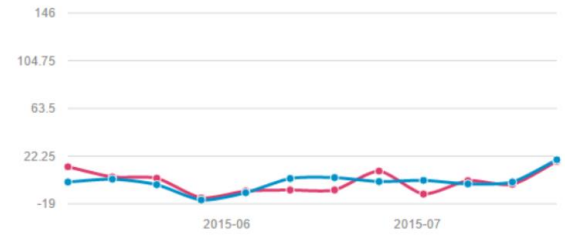
Expected Impact, Sum_Gross Margin

100

Significance Level, %

Time Comparison Plot

Comparison



Test