

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?
The sum of gross margin will be used as a performance metric for this test.
2. What is the test period?
The test period is made of the 12 weeks between 29-Apr-16 and 21-Jul-16.
3. At what level (day, week, month, etc.) should the data be aggregated?
The data should be aggregated at weekly level.

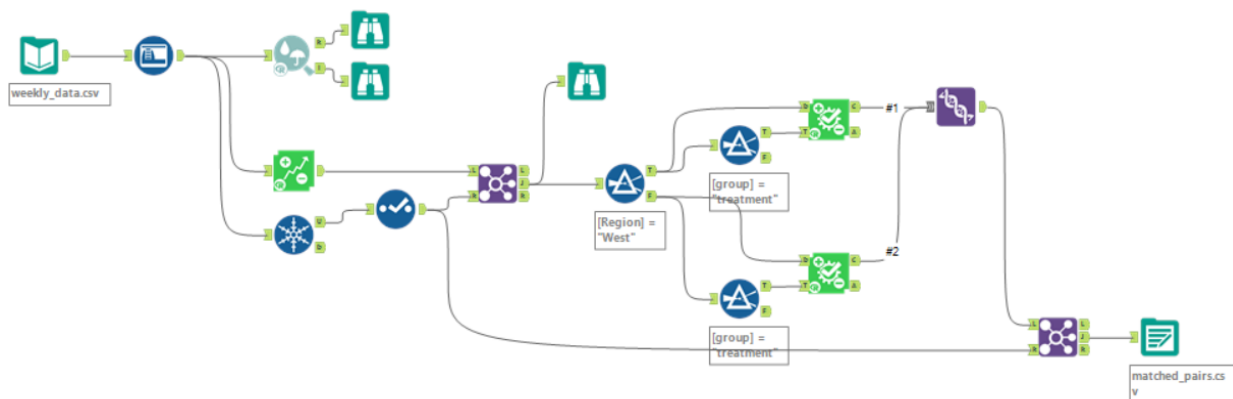
Step 2: Clean Up Your Data

The main transformations made on the available data were to select the desired period for analysis (76 weeks data from 6-Feb-15 to 21-Jul-16, since A/B test requires 52 weeks of data in addition to a minimum of 12 weeks needed to calculate seasonality and for the period of testing each), aggregations for the metrics at weekly levels and defining control and treatment groups.

Filtering data and aggregating:



Creating test groups:



Step 3: Match Treatment and Control Units

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

AvgMonthSales and *Sq_ft* are options for control variables

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

AvgMonthSales has a Pearson Correlation of 0.7637, while *Sq_ft* is -0.0008. The performance metric for this tool is the invoice count per week which represents weekly foot traffic.

	Association Measure	p-value	
<i>AvgMonthSales</i>	0.76370090	0.00000	***
<i>Sq_Ft</i>	-0.00088472	0.93102	

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

AvgMonthSales showed a high correlation with the performance metric with great significance, so it will be defined as the control variable along with trend and seasonality.

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	12219	9524
2301	3102	9238
2322	2409	3235
2341	12536	2383

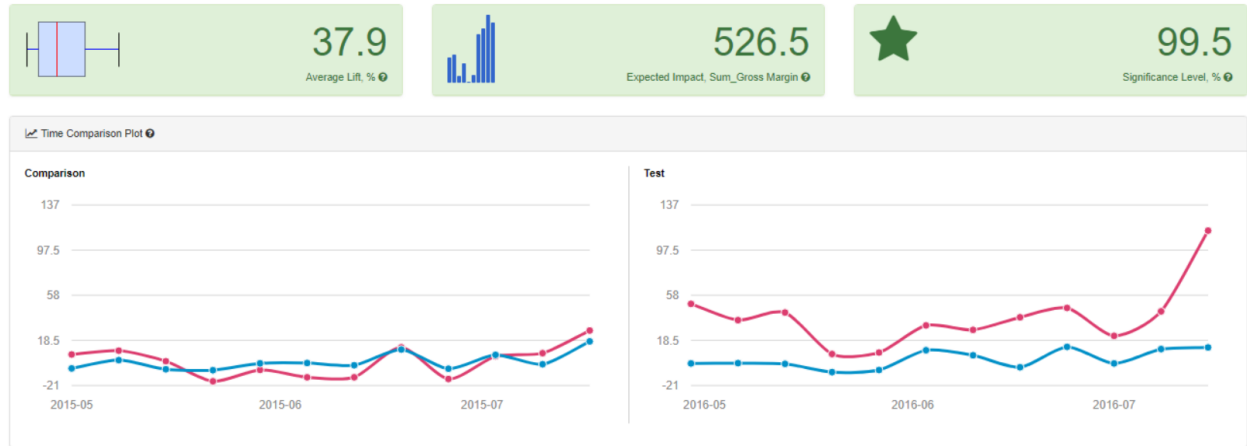
Step 4: Analysis and Writeup

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

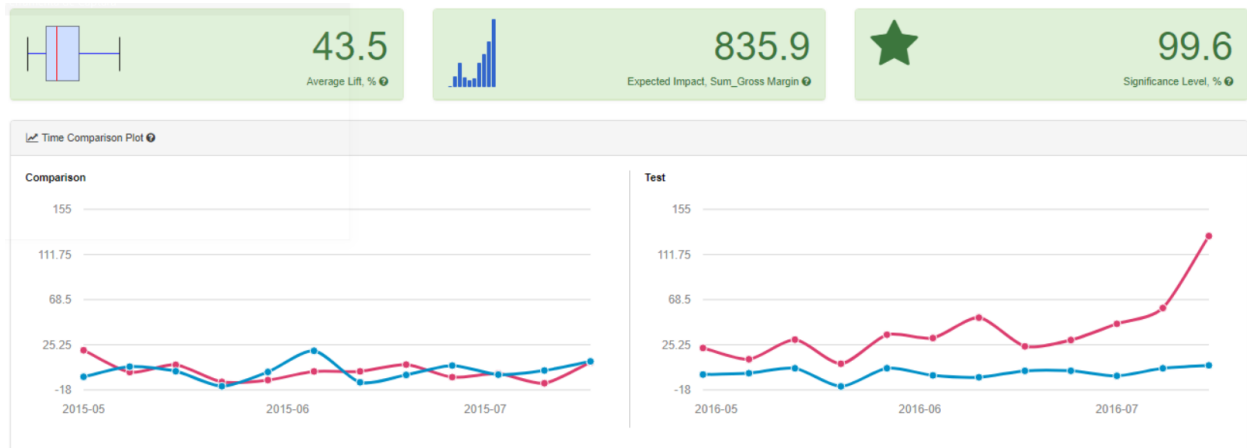
The company should roll out the updated menu. A comparison of the treatment-control pairs indicates an average lift in Sum_Gross Margin for the treatment units over the control units of 40.7%, which is higher than the 18% previously defined as a success. The lift is higher even considering regions West and Central individually.

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

West:



Central:



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

