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 performance metric is the impact on profitability, this is represented by the Gross Margin.

2. What is the test period?

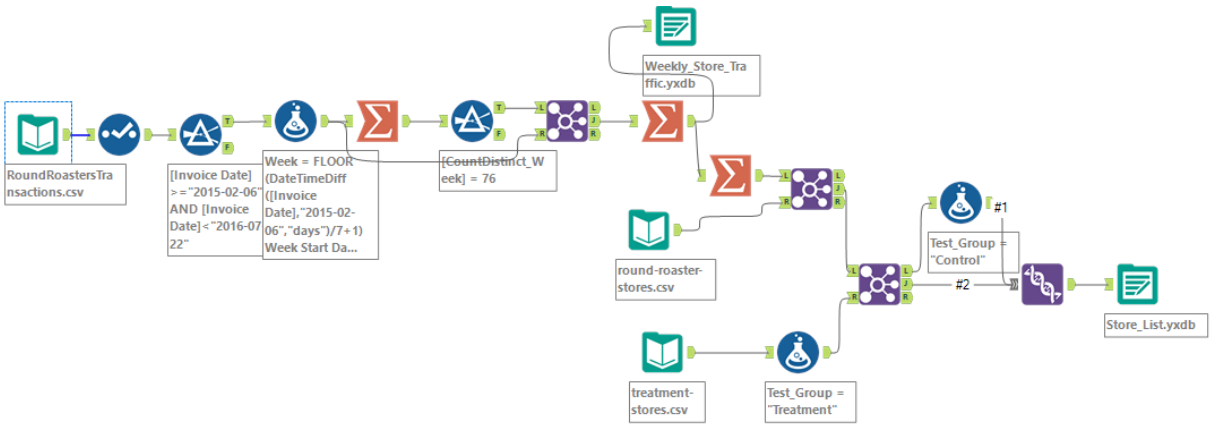
The test period is a 12 week period 2016-April-29 to 2016-July-21.

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

The data will be aggregated on a weekly level.

Step 2: Clean Up Your Data

Using Alteryx to create two files consisting of weekly store traffic and the store list.
76 weeks of data is used for the AB Test, 52 weeks plus 12 weeks for seasonality and a further 12 weeks for the length of the test period.



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.

From the RoundRoastersStore file, the variables which could be used as control variables are The size of the store in square feet (Sq_ft) and the average monthly sales per store (AvgMonthSales).

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

Using the Pearson correlation tool in Alteryx the following correlation matrix is created, the Average Monthly Sales variable has a high correlation of 0.79. The Square Feet variable has a low correlation of -0.02

Record	FieldName	Sum_Gross Margin	Sq_Ft	AvgMonthSales
1	Sum_Gross Margin	1	-0.019345	0.790358
2	Sq_Ft	-0.019345	1	-0.046967
3	AvgMonthSales	0.790358	-0.046967	1

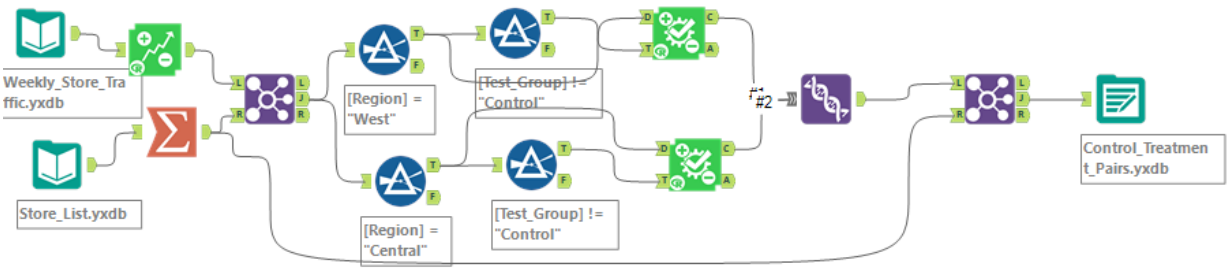
3. What control variables will you use to match treatment and control stores?

Based on the Pearson correlation Matrix the Average Monthly Sales variable will be used with the Trend and Seasonality variables.

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

Treatment and Control Units Workflow;



Step 4: Analysis and Writeup

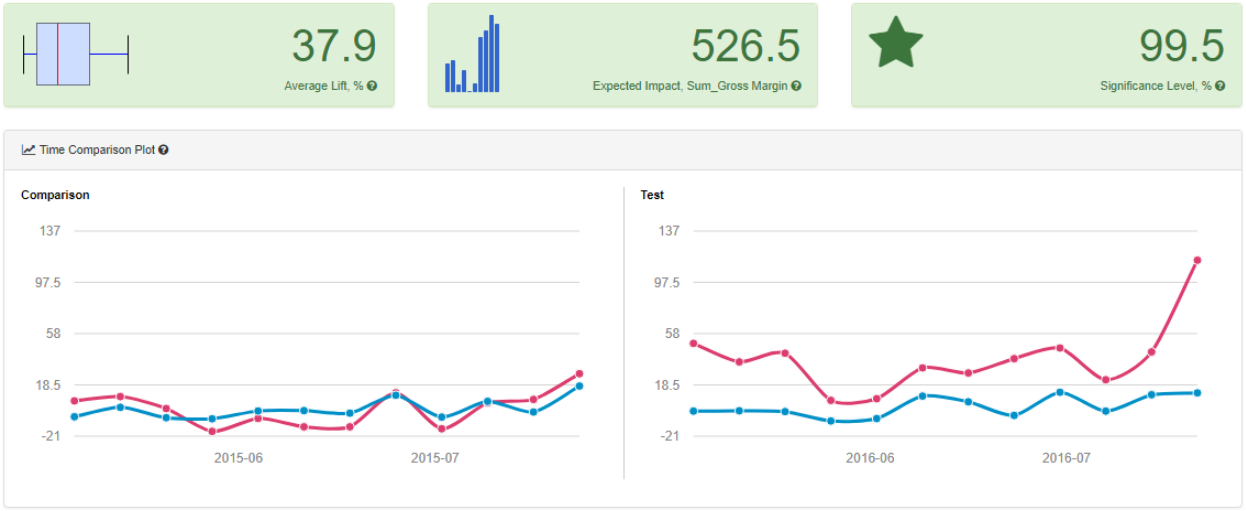
1. What is your recommendation - Should the company roll out the updated menu to all stores?

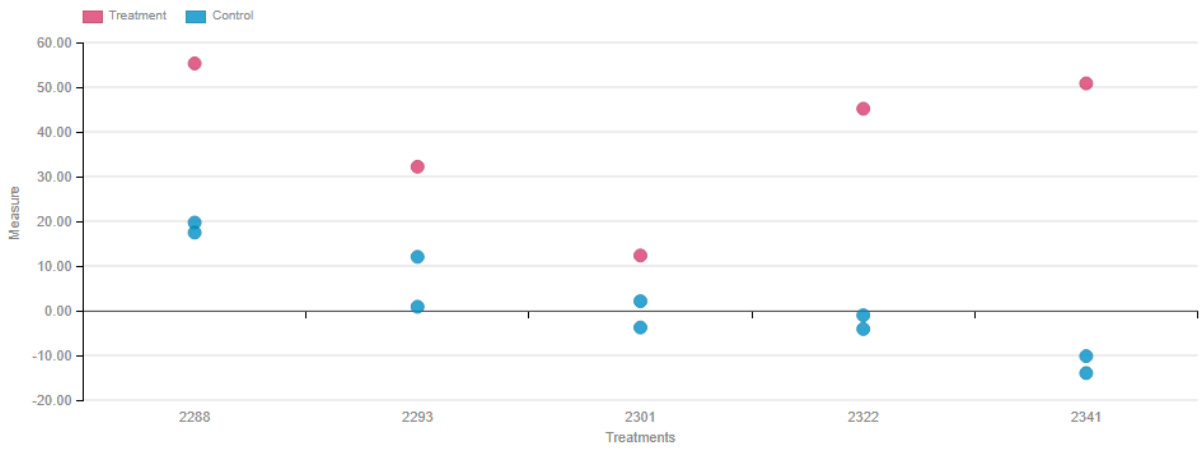
The company should roll out the updated menu as there is more than an 18% increase in profit margin compared to the comparative period while compared to the control stores (incremental lift).

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

West Region

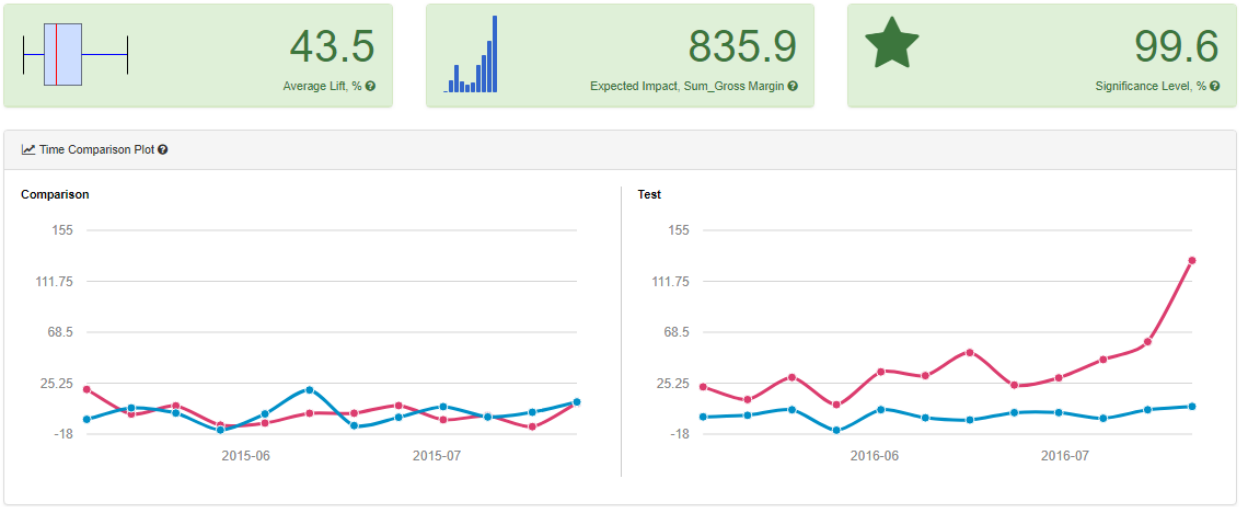
The average lift is 37.9% with a significance level of 99.5%. The expected impact will be $526.50 per store per week.

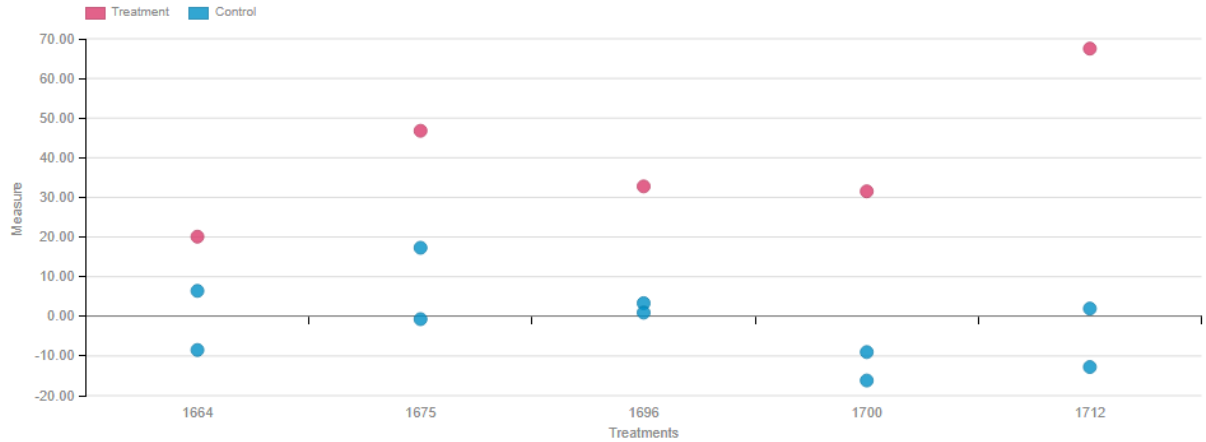




Central Region.

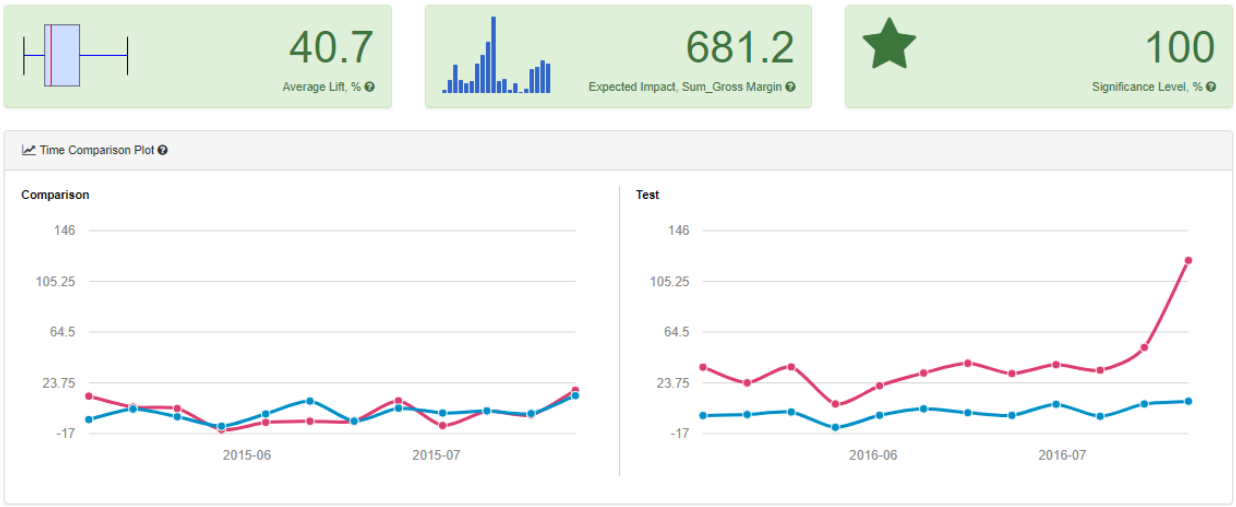
The average lift is 43.5% with a significance level of 99.6%. The expected impact will be $835.90 per store per week.

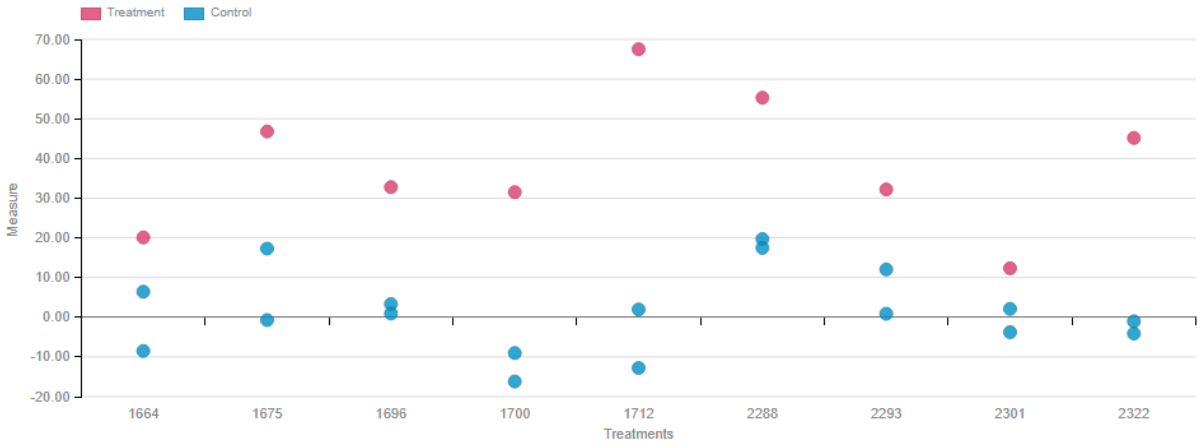




3. What is the lift from the new menu overall?

Overall the average lift is 40.7% with a significance level of 100%. The expected impact will be $681.20 per store per week.





AB Analysis Workflow