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 total sum of the gross margin is the performance metric that I will use to evaluate the results of the test!

2. What is the test period?

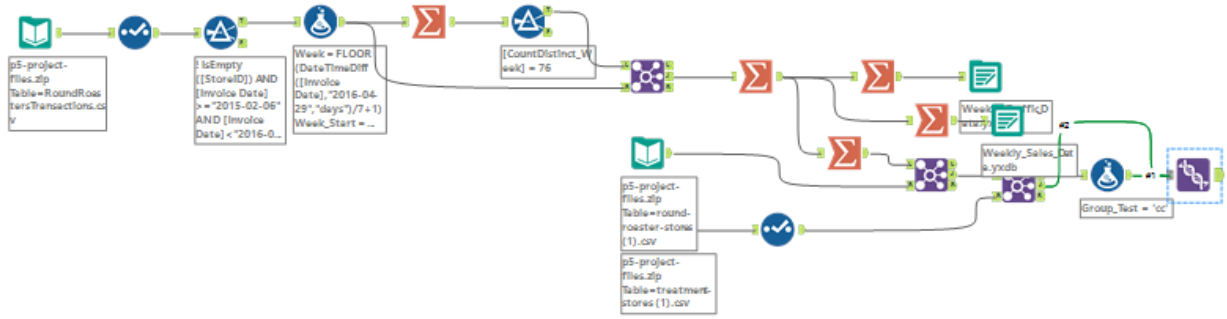
   The test period time between 20-04-2016 and 21-07-2016. So, it is 12 weeks.

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

   At the weekly level

Step 2: Clean Up Your Data

Data has cleaned to meet the specifications and to be ready for next steps to apply the test and generate the results that included aggregate data for weekly traffic and weekly sales. Also, extracting the data according the periods needed for the test and except others.
The following workflow illustrate the processes well!



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.

1. What control variables should be considered?
   AveMonthSales is the controls variable that is considered

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

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

Simply we can see a high positive correlation between AvgMnonthSales as a potential variable and Sum_Sum_Gross_Margin as the performance metric results in 0.7903. Sq_Ft shows very low and negative correlation with performance metric results in -0.0193

3. What control variables will you use to match treatment and control stores?
   For sure trend, seasonality and AvgMonthSales

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

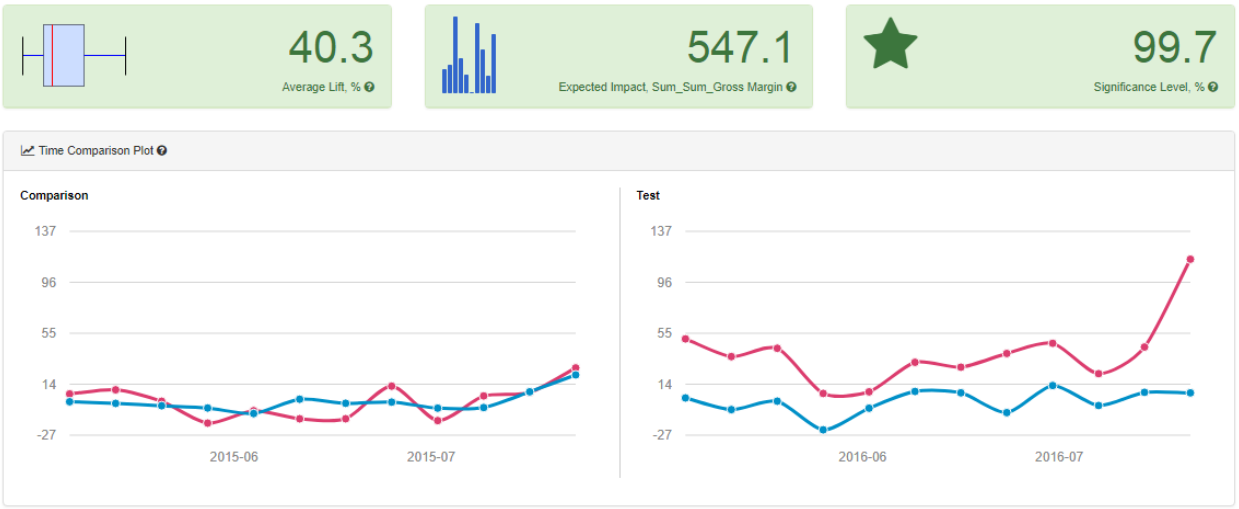
Treatment Store	Control Store 1	Control Store 2
1664	1857	12069
1675	7484	11568
1696	2114	12219
1700	8562	10018
1712	1964	10468
2288	7584	2409
2293	1508	3102
2301	7384	2333
2322	7284	11368
2341	8212	12069

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 testing results I recommend that the company should roll out the updated menu to all stores

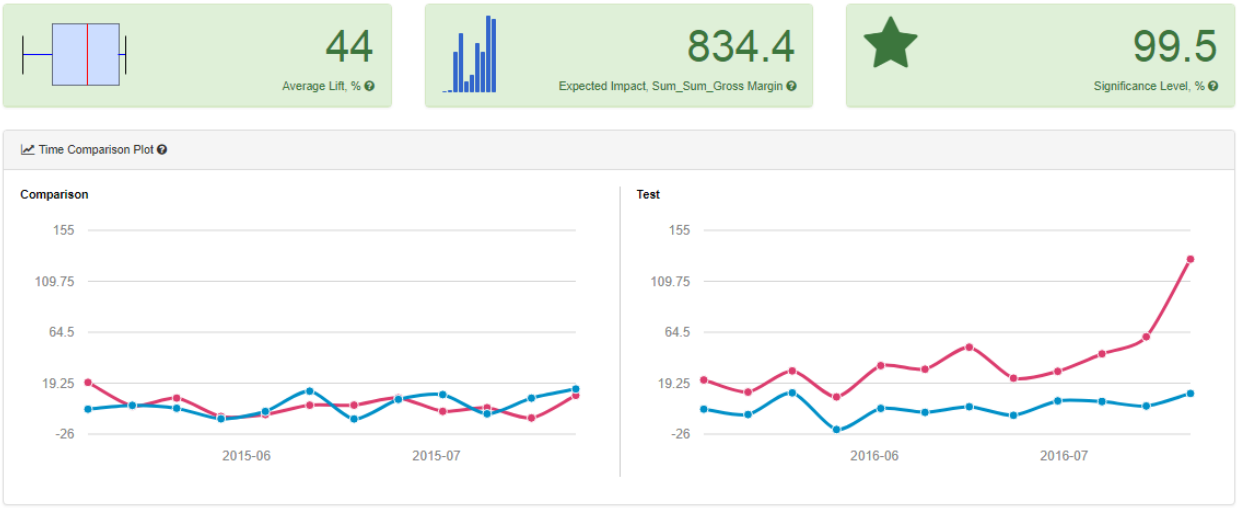
2. What is the lift from the new menu for West and Central regions (include statistical significance)?

West Regions Stores



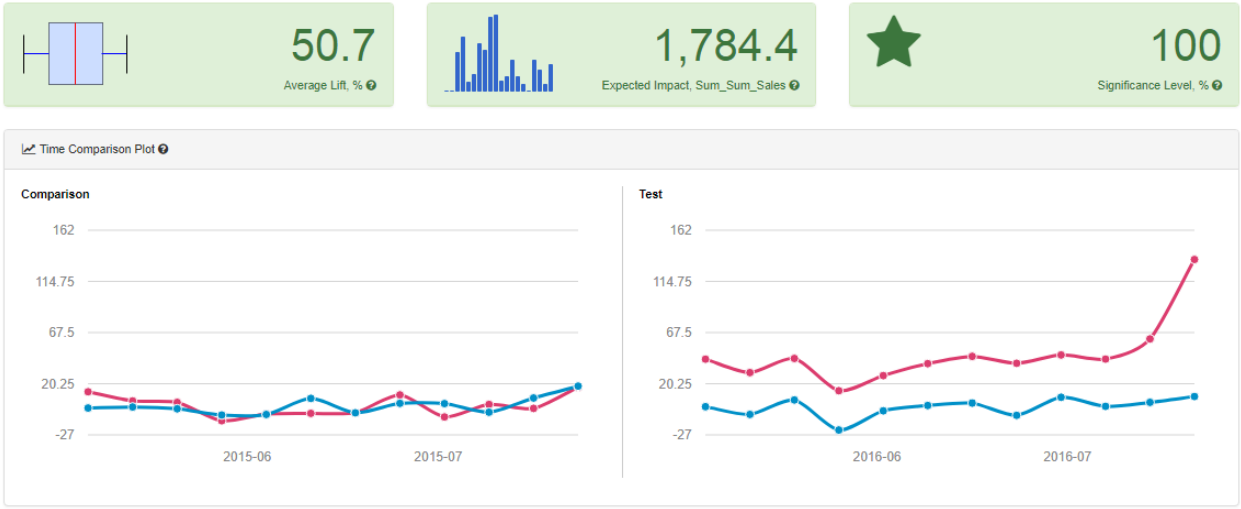
The report show that the new menu showed 40.3% improvement at a significance of 99.7% over the regular menu.

Central Regions Stores



The report show that the new test menu showed 44% improvement at a significance of 99.5% over the regular menu

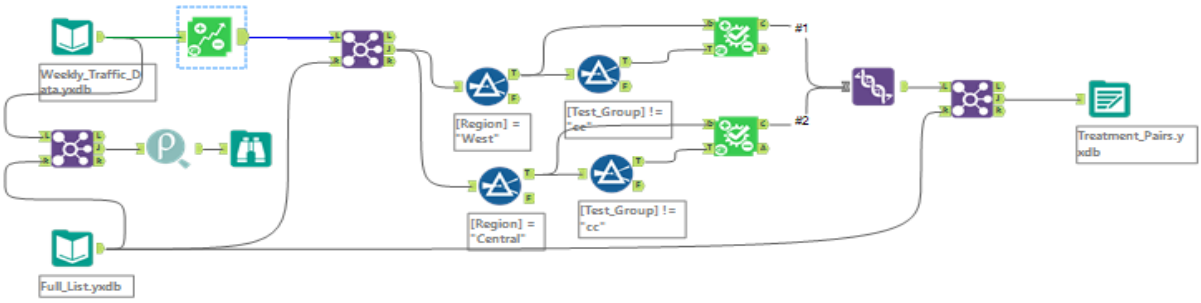
3. What is the lift from the new menu overall?



The report show that the test new menu showed 50% improvement at a significance of 100% over the regular menu.

Other workflows:

Trend and Seasonality



A/B Testing