Project: Analyzing a Market Test

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Step 1: Plan Your Analysis

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

   Sum of Gross Margin would be used as a performance metric to test whether to introduce the new menu items (sandwich and wines) to increase the sales at Round Roaster coffee chain.

2. What is the test period?

   The test ran for a period of 12 weeks (2016-April-29 to 2016-July-21).

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

   The data should be aggregated on a weekly basis since the test ran for 12 weeks. So it's a weekly process.

Step 2: Clean Up Your Data

The datasets from round roasters transactions and round roasters stores are combined. 76 weeks of data is used (52 weeks of data + at least 12 weeks to calculate trend and 12 weeks for test period). The test ended on 21st July 2016.

Four new variables: Week, week_start, week_end and new_product_flag has been created to aggregate the transaction data from Round Roasters to get weekly stores traffic (count of unique invoices) and weekly sales (sum of gross margin and sum of store sales).

Step 3: Match Treatment and Control Units

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

   AvgMonthSales should be considered as control variables. Sq_Ft should be ignored and not selected as control variables.

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

	Weekly_Gross_Margin	Sq_Ft	AvgMonthSales
Weekly_Gross_Margin	1.00000	0.91702	0.90956
Sq_Ft	0.91702	1.00000	0.83971
AvgMonthSales	0.90956	0.83971	1.00000

Avg Month Sales has a high correlation with the Weekly_Gross_Margin performance metric 0.9. Sq_Ft has also a high correlation with the Weekly_Gross_Margin 0.9.

3. What control variables will you use to match treatment and control stores?
   AvgMonthSales apart from Trend and Seasonality would be used to match treatment and control stores.

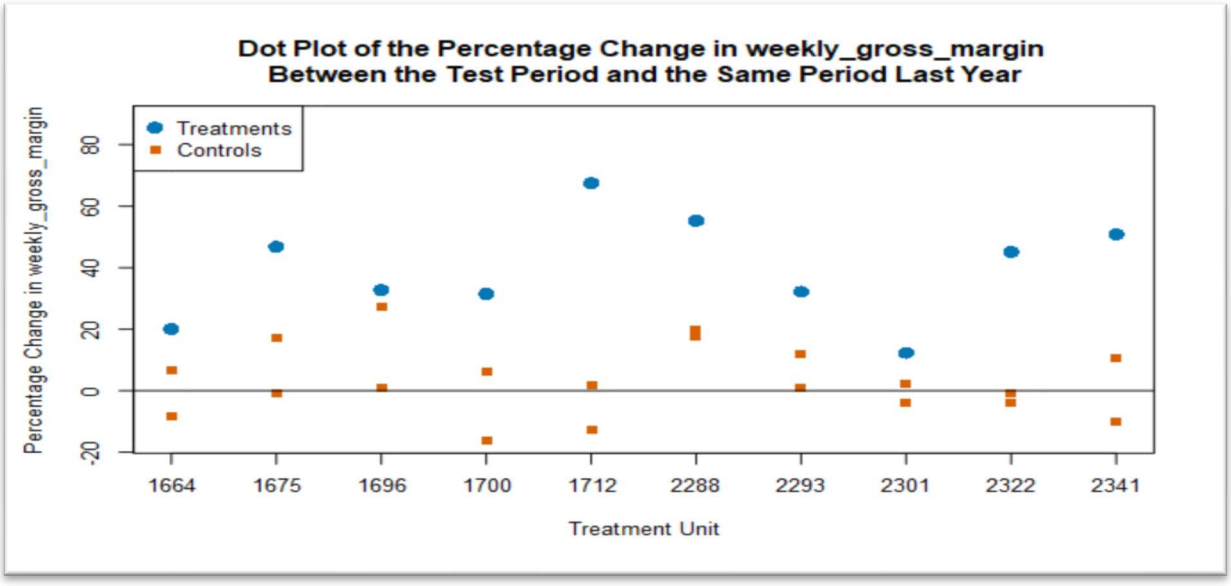
4. Please fill out the table below with your treatment and control stores pairs:

Treatment Store	Control Store 1	Control Store 2
1664	7162	8112
1675	1580	1807
1696	1964	8212
1700	1508	2014
1712	8162	7434
2288	9081	2568
2293	12219	9524
2301	3102	9238
2322	2409	3235
2341	2333	2383

Step 4: Analysis and Writeup

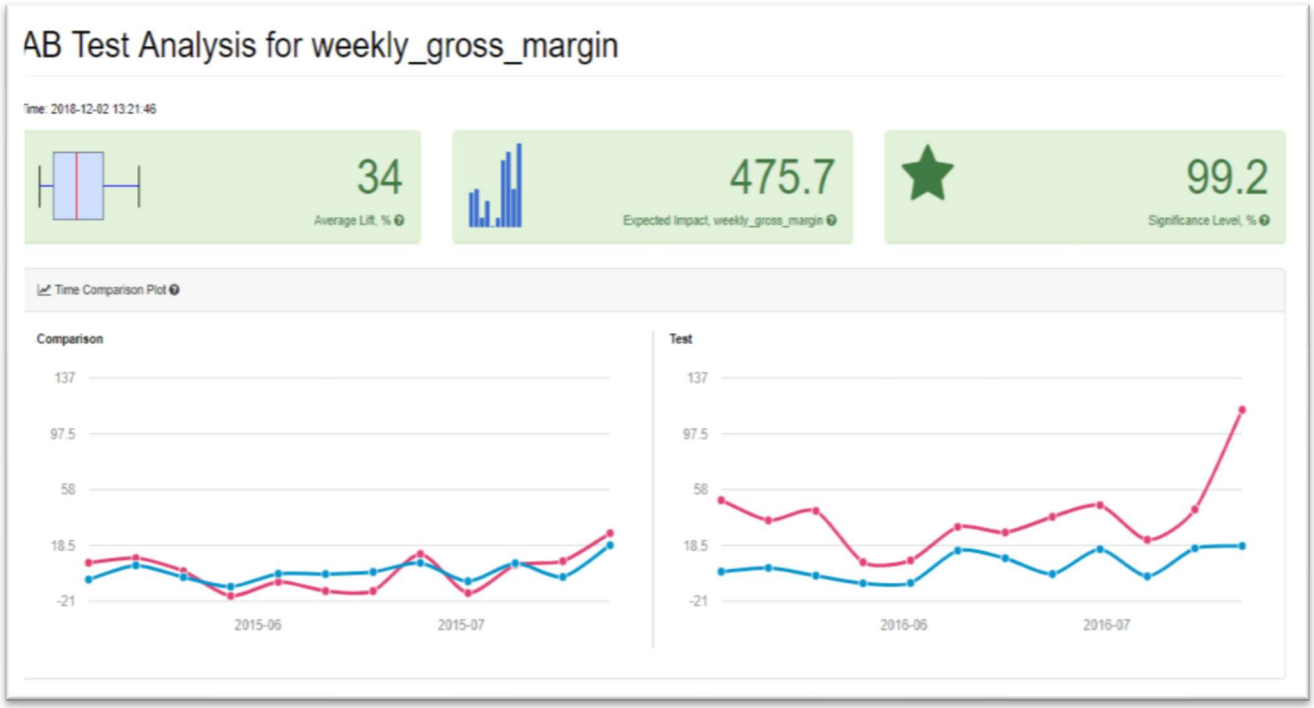
1. What is your recommendation - Should the company roll out the updated menu to all stores?

   Yes, the company should roll out the updated menu to all stores. While looking at the overall scenario (including West and Central region), the average percentage change in the weekly gross margin per store is around 35% (criteria was 18%). Also, in the test period, all the treatment is above control group showing more sales.



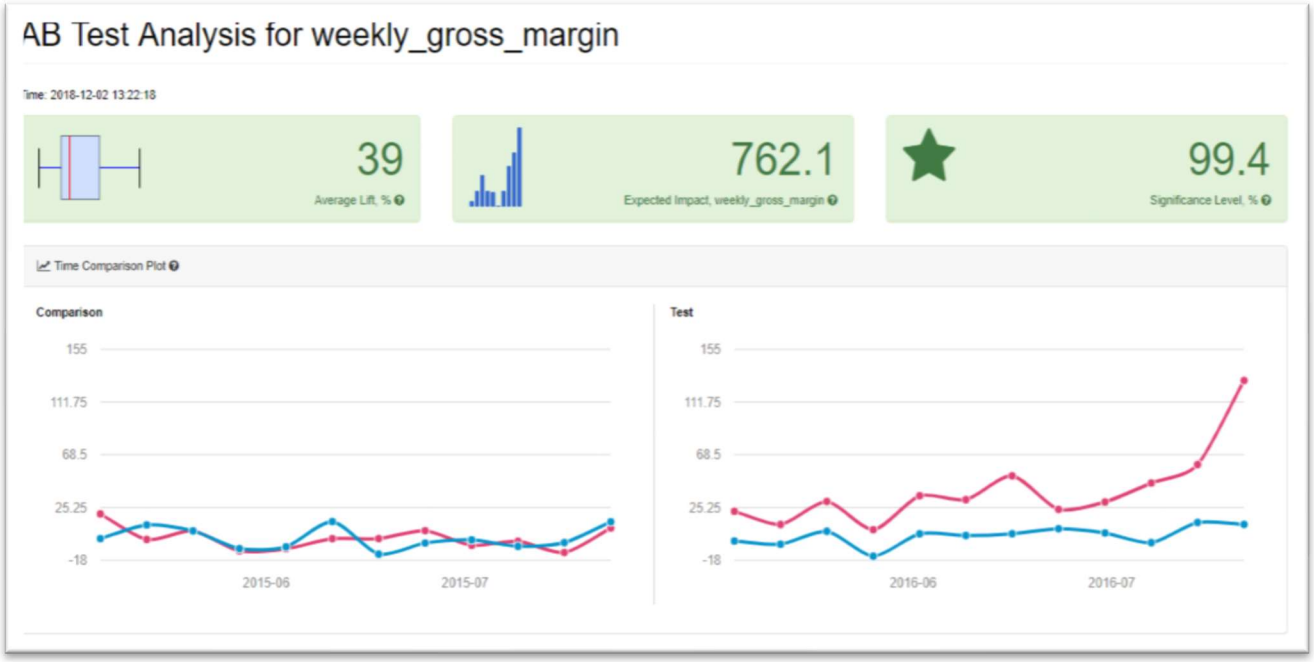
2. What is the lift from the new menu for West and Central regions (include statistical significance)?

   The lift and significance for “West” Region is shown in the dashboard below:



The dashboard shows for West region, the average lift as a result from introducing the new menu items with sandwich and wine would be 34% per store per week at a significance of 99.2% or approx. $475.7 per store per week.

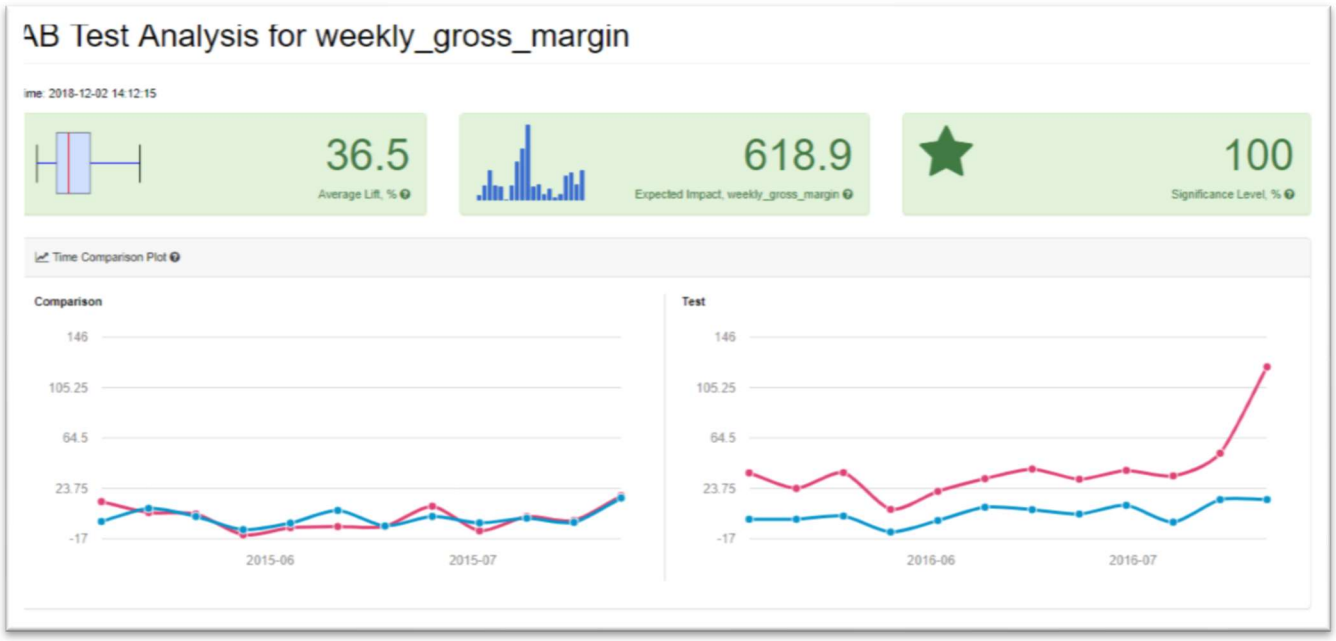
The lift and significance for “Central” Region is:



The dashboard shows for Central region, the average lift as a result from introducing the new menu items with sandwich and wine would be 39% per store per week at a significance of 99.4% or approx. $762.1 per store per week.

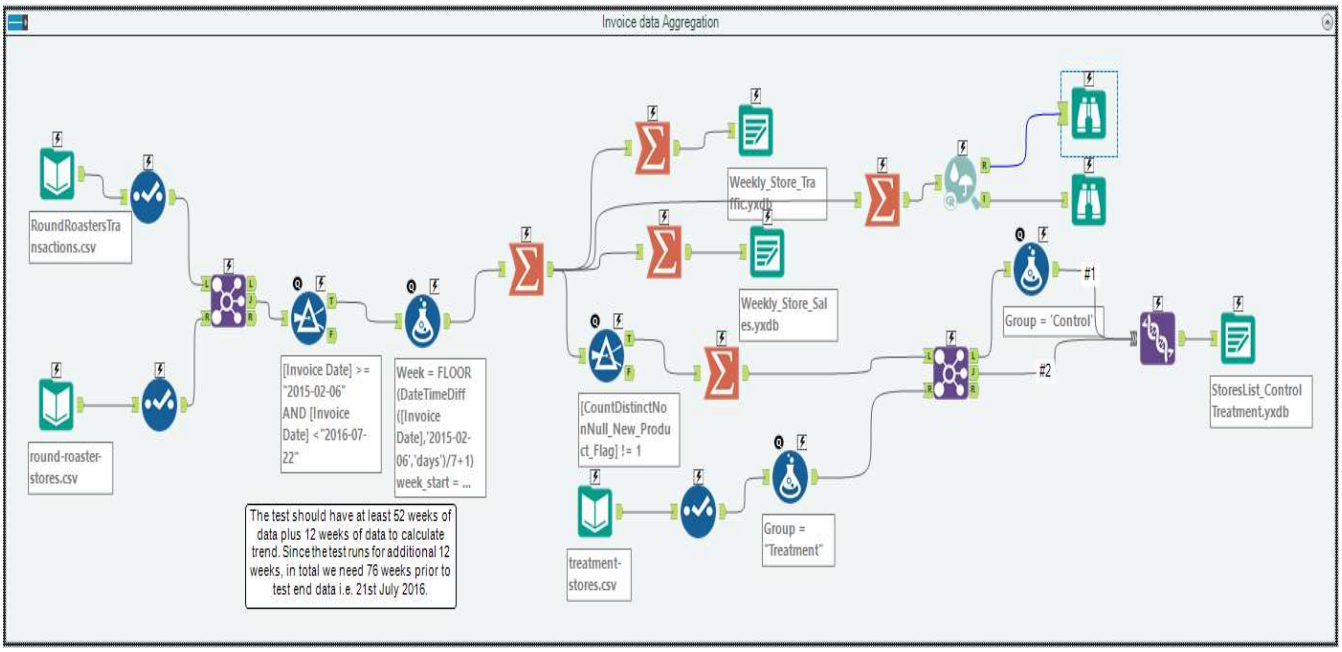
3. What is the lift from the new menu overall?

The dashboard shows for Overall, the average lift as a result from introducing the new menu items with sandwich and wine would be 36.5% per store per week at a significance of 100% or approx. $618.9 per store per week.

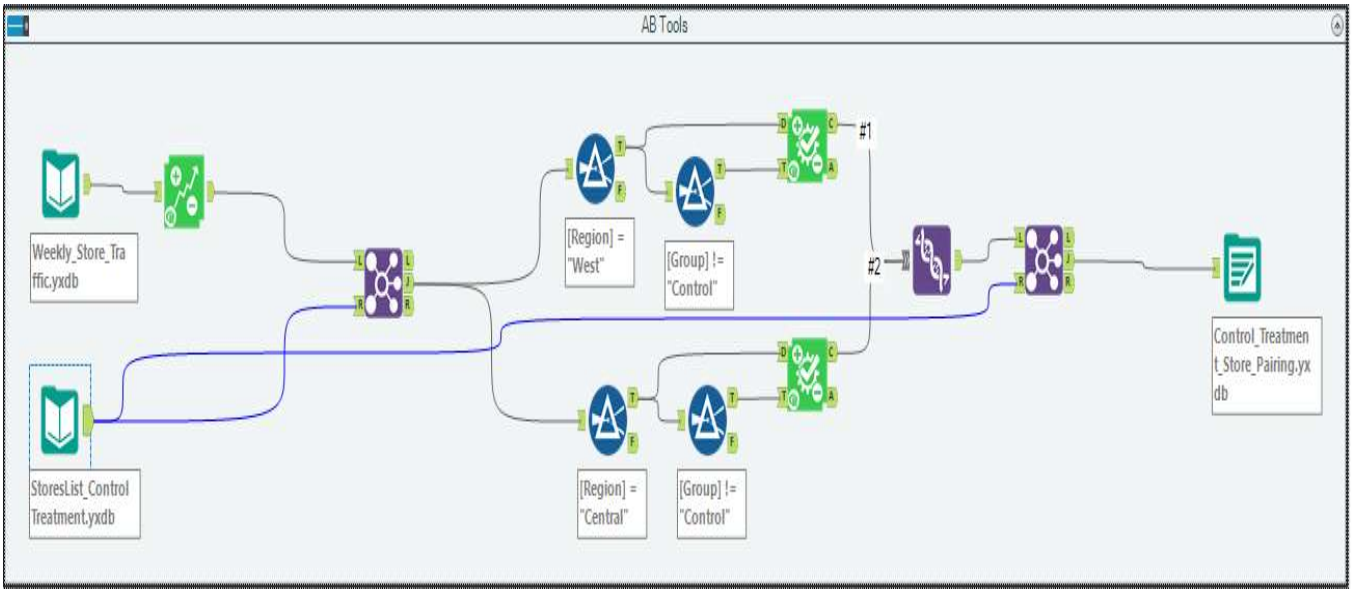


Alteryx Workflows:

Transaction data aggregation:



AB Trend and AB Controls for Treatment Control Pairing:



Final AB Analysis: