

Project: Analyzing a Market Test

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Plan Your Analysis

Ques1: What is the performance metric you'll use to evaluate the results of your test?

Answer: The aggregate of the gross margin will be used as success metrics to determine whether to implement gourmet sandwiches and limited wine offerings to promote sales growth in Round Roasters.

Ques2: What is the test period?

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

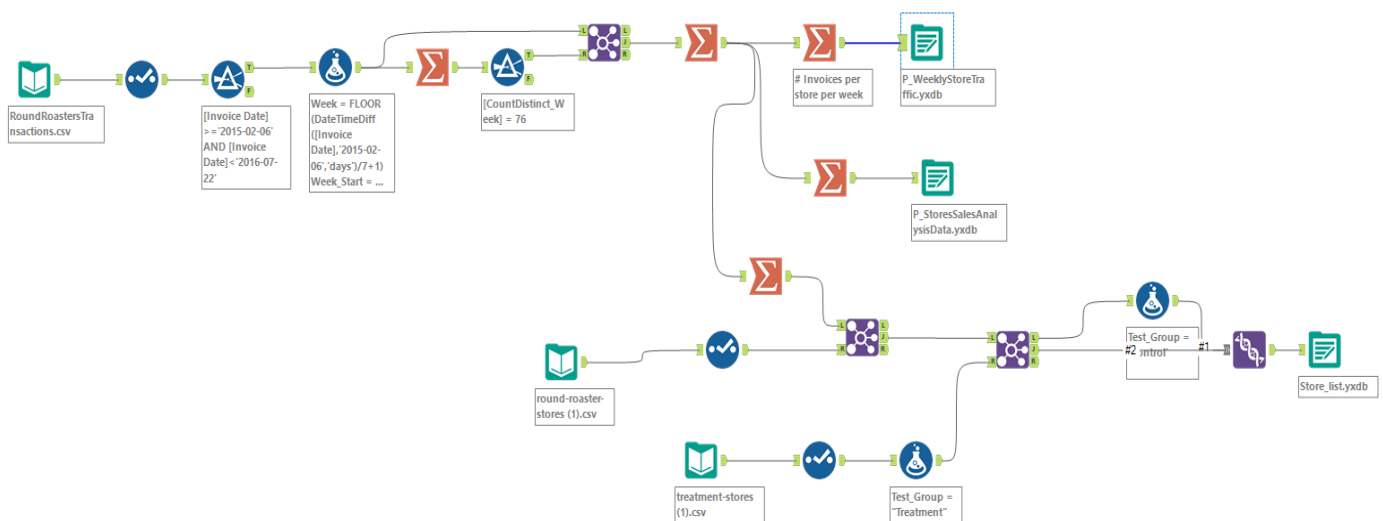
Ques3: At what level (day, week, month, etc.) should the data be aggregated?

Answer: The data should be aggregated at weekly level

Clean Up Your Data

We first need to clean the data and aggregate it to a weekly level. I first selected all the necessary field and then selected the data which are only between the period from 29th April 2016 to 21st July 2016. Then I aggregated the data weekly. I then grouped my data based on store and week. Checked whether the distinct count of week is 76 or not. If 76 then we proceed further by grouping it further by week, start week, end week etc. I used on Alteryx to get the P_WeeklyStoreTraffic and P_StoresSalesAnalysis output (which we will use to match control stores to the treatment store list).

Alteryx Workflow



Match Treatment and Control Units

Ques1: What control variables should be considered?

Answer: The control variables are AvgMonthSales and Sq_Feet. from the RoundRoastersStore csv file

Ques2: What is the correlation between each potential control variable and your performance metric?

Answer: The "AvgMonthSales" variable is highly correlated with "Gross Margin", the "Sq_Ft" variable has a low correlation with "Gross Margin".

Pearson Correlation Analysis

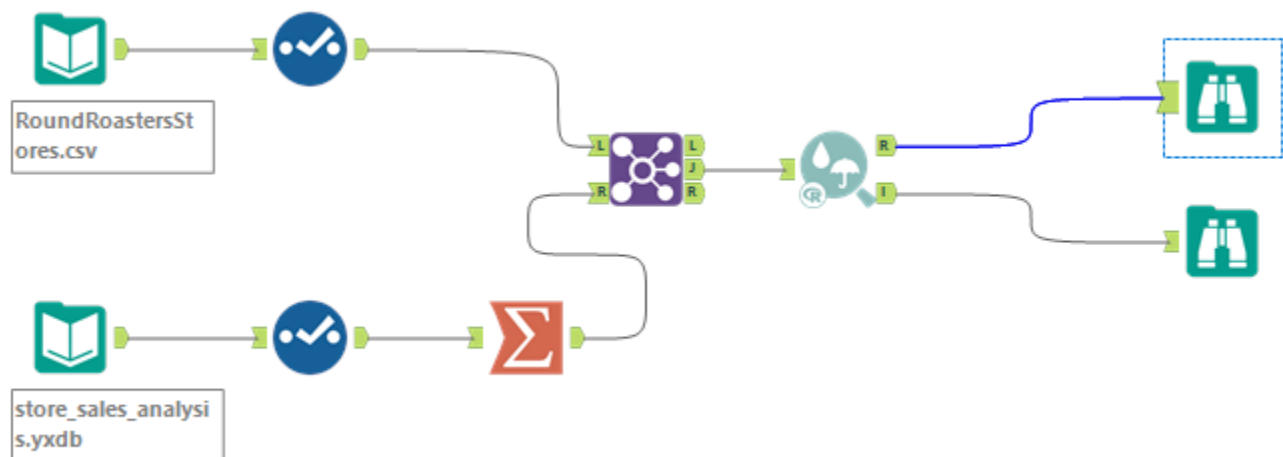
Full Correlation Matrix

	Sq_Ft	AvgMonthSales	Sum_Sum_Sum_Gross.Margin
Sq_Ft	1.000000	-0.046967	-0.024255
AvgMonthSales	-0.046967	1.000000	0.990982
Sum_Sum_Sum_Gross.Margin	-0.024255	0.990982	1.000000

Matrix of Corresponding p-values

	Sq_Ft	AvgMonthSales	Sum_Sum_Sum_Gross.Margin
Sq_Ft		0.59138	0.78168
AvgMonthSales	0.59138		0.00000
Sum_Sum_Sum_Gross.Margin	0.78168	0.00000	

Alteryx Workflow



Ques3: What control variables will you use to match treatment and control stores?

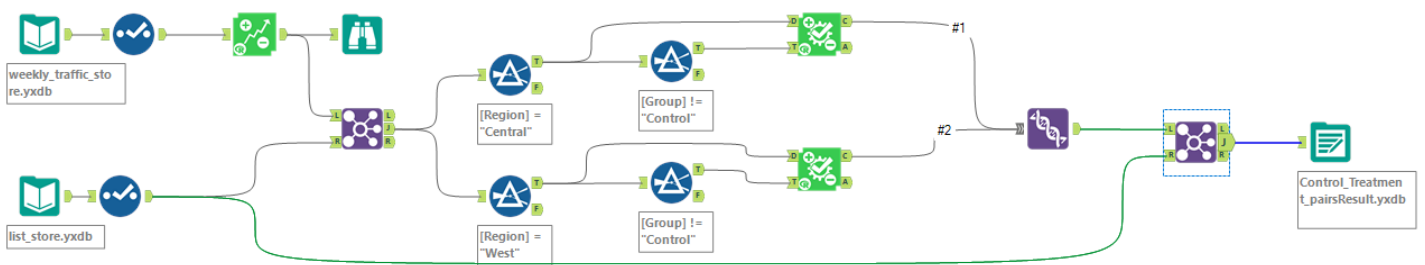
Answer: Based on the correlation Analysis we can say that only AvgMonthSales will be used to match treatment and control stores. Therefore, AvgMonthSales will be used together with Trend and Seasonality when matching treatment and control stores

Ques4: 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

Treatment Store	Control Store 1	Control Store 2
1700	2014	1630
1712	8162	7434
2288	9081	2568
2293	12219	9524
2301	3102	9238
2322	2409	3235
2341	12536	2341

Alteryx Workflow



Analysis and Writeup

Ques1: What is your recommendation - Should the company roll out the updated menu to all stores?

Answer: It is strongly recommended to apply the new menu to all stores of the company, since the gross sales margin exceeds the 18% established by the company as a minimum to generate profit.

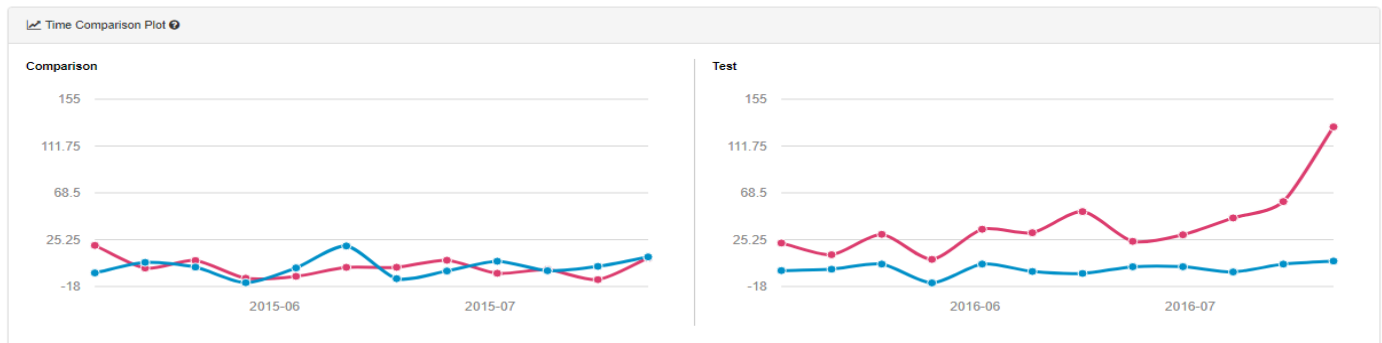
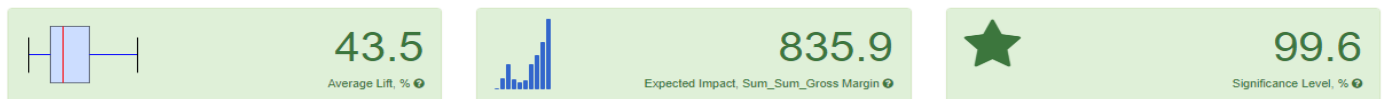
Ques2: What is the lift from the new menu for West and Central regions (include statistical significance)?

Answer:

Central Region lift: The lift for the west region is 43.5% with the statistical significance of 99.6%

AB Test Analysis for Sum_Sum_Gross Margin

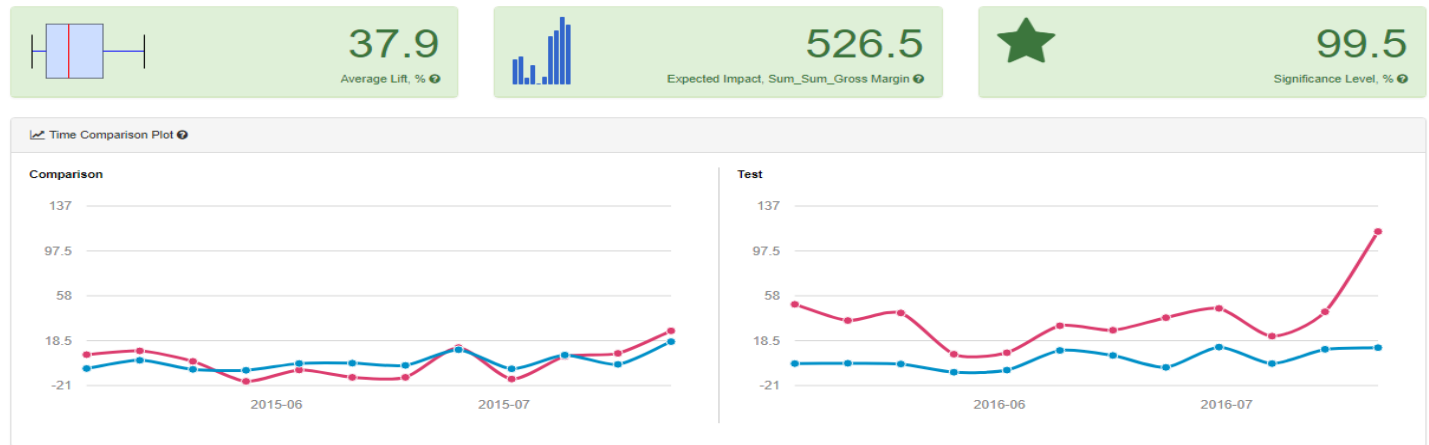
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West Region lift: The lift for the west region is 37.9% with the statistical significance of 99.5%

AB Test Analysis for Sum_Sum_Gross Margin

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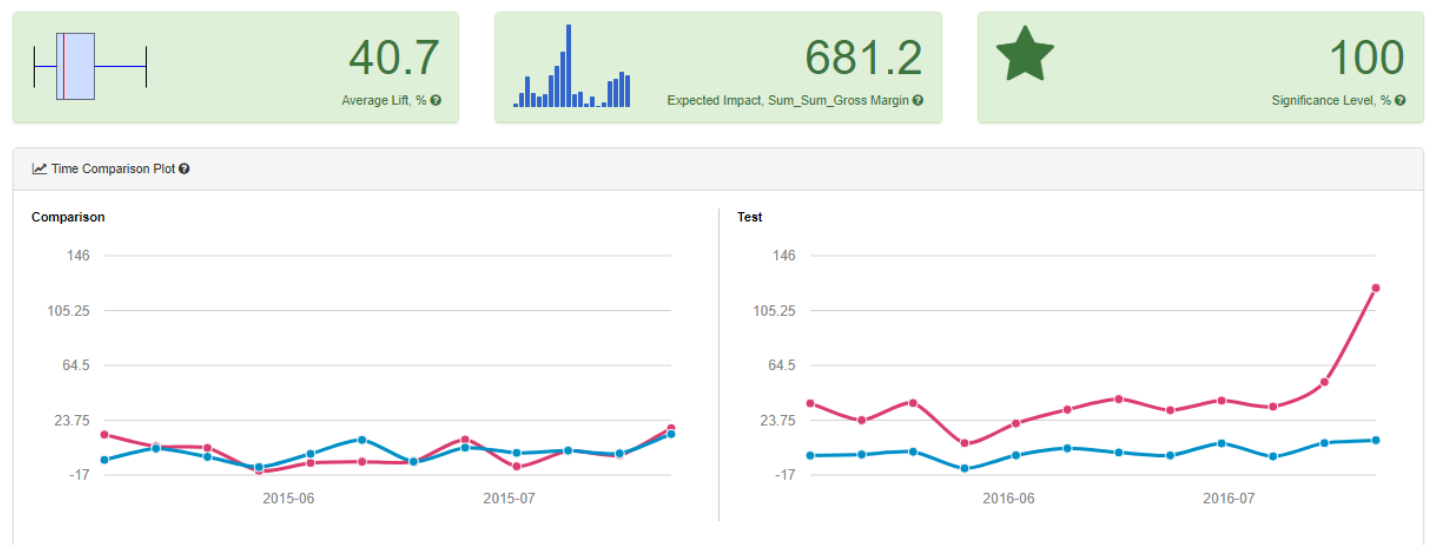


Ques3: What is the lift from the new menu overall?

Answer: Increase (lift) of the new menu in general.

AB Test Analysis for Sum_Sum_Gross Margin

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The lift for the new menu in general is 40.7 % with the statistical significance of 100%

Alteryx Workflow

