

Project: Analyzing a Market Test

Step 1: Plan Your Analysis

*To perform the correct analysis, you will need to prepare a data set. (500 word limit)
Answer the following questions to help you plan out your analysis:*

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

In order to evaluate the results of my test, the sum of gross margin will be using as performance metrics to evaluate if gourmet will be introducing and limited wine offerings to spur sales growth in Round Roasters.

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 at weekly level.

Step 2: Clean Up Your Data

In this step, you should prepare the data for steps 3 and 4. You should aggregate the transaction data to the appropriate level and filter on the appropriate data ranges. You can assume that there is no missing, incomplete, duplicate, or dirty data. You're ready to move on to the next step when you have weekly transaction data for all stores.

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.

The variables that we should be considered are : AvgMonthSales and Sq_Ft.

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

Thanks to the Pearson Correlation Analysis, we see that AvgMonthSales has a high correlation of 0.99 with performance metric, which is the sum of Gross

Margin. We can also observe that Square Feet has a weak correlation of -0.05.

Full Correlation Matrix

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

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

AvgMonthSales will be used together with Trend and Seasonality when matching 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	1964	8562
1675	1807	7584
1696	1863	7334
1700	7037	1508
1712	8162	7434
2288	2568	9081
2293	12219	9639
2301	11668	12019
2322	9238	9388
2341	2572	3102

Step 4: Analysis and Writeup

Conduct your A/B analysis and create a short report outlining your results and recommendations. (250 words limit)

Answer these questions. Be sure to include visualizations from your analysis:

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

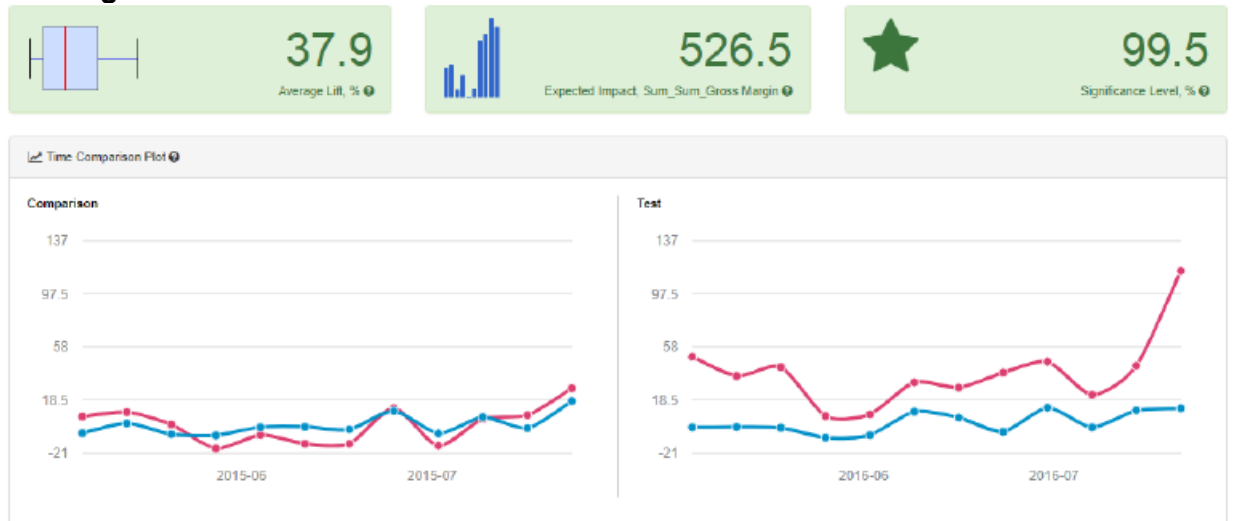
The company should roll out the updated menu to all stores as the sum of profit margin increased by more than 18%, from \$17,978.67 per store to \$26,687.45 per store during test period.

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

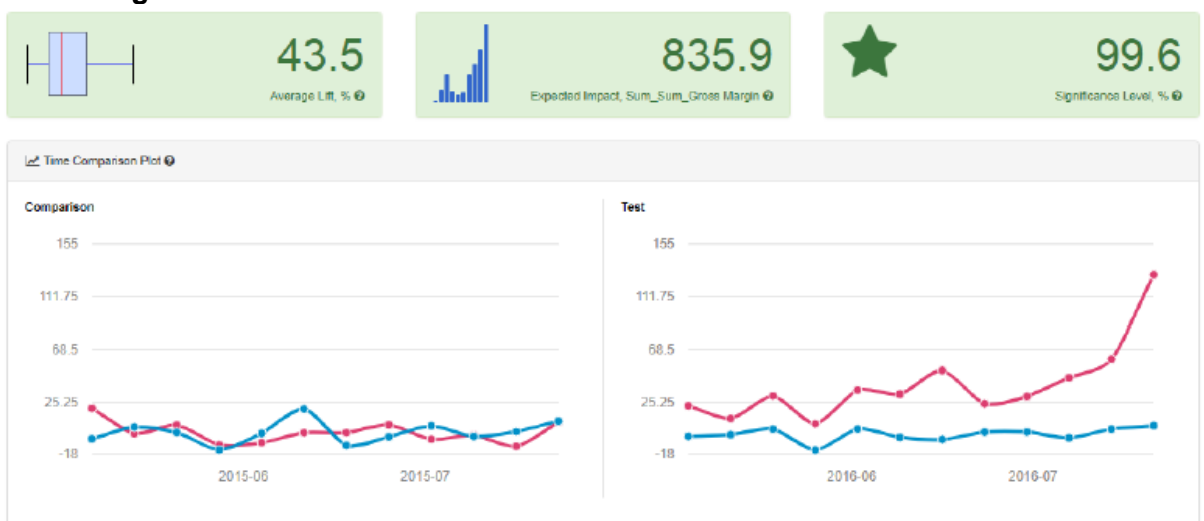
The lift region West region is 36.6% while lift for central region is 43.2% and both have a statistical significance of 99.5% and 100%.

Data viz of West and Central regions

West region



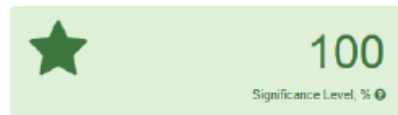
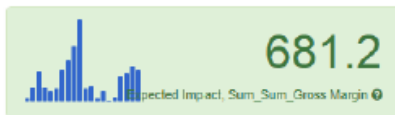
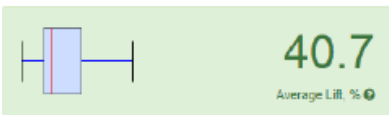
Central region



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

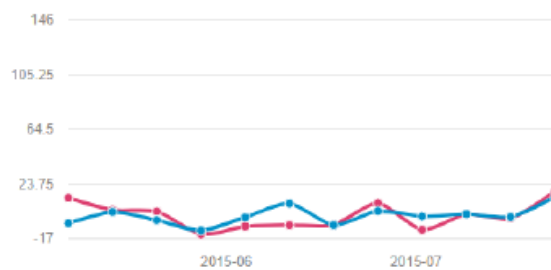
The lift from the new menu overall is 40.7% with statistical significance of 99.6%.

Data viz: Central region



Time Comparison Plot ⓘ

Comparison



Test

