

# 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?
  - Take the sum of the gross margin as a performance metric from which we can analyze that gourmet sandwiches and limited wine should be introduced to increase sales or not.
2. What is the test period? – April 29<sup>th</sup> 2016 to July 21<sup>st</sup> 2016 (12 weeks).
3. At what level (day, week, month, etc.) should the data be aggregated? – Weekly level.

## Step 2: Clean Up Your Data

- Take the union of the round roasters transactions and stores dataset. For A/B testing take additional data of 52 weeks to 12 weeks to calculate seasonality and trend.
- Use 12 weeks in alteryx instead of 6 as test is for 12 weeks. Get new field for Week being, week, week end and new prod flag for calculating weekly store traffic and sales.
- After this we can get treatment-stores to form treatment store and control stores.

## Step 3: Match Treatment and Control Units

1. What control variables should be considered? Note: Only consider variables in the RoundRoastersStore file.
  - AvgMonthSales and Sq\_feet
2. What is the correlation between your each potential control variable and your performance metric?
  - AvgmonthSales has correlation coefficient of 0.9909 with sumGross.Margin, Sq\_ft has correlation of -0.024224 with Sum\_Sum\_gross.Margin

*Full Correlation Matrix*

	Sum_Sum_Gross.Margin	AvgMonthSales	Sq_Ft
Sum_Sum_Gross.Margin	1.000000	0.990978	-0.024224
AvgMonthSales	0.990978	1.000000	-0.046967
Sq_Ft	-0.024224	-0.046967	1.000000

3. What control variables will you use to match treatment and control stores?
  - Only AvgMonthSales will be used to match treatment and control stores.

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

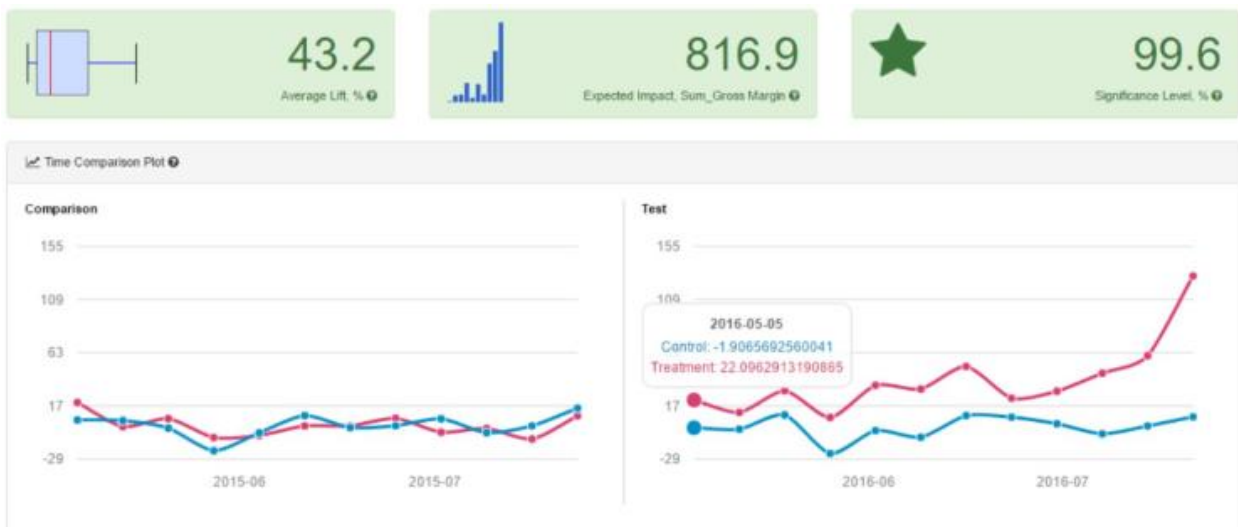
Treatment Store	Control Store 1	Control Store 2
1664	1964	8562
1675	1807	7584
1696	1863	7334
1700	7037	1508
1712	8162	7434
2288	2568	9081
2293	12219	9639
2301	11668	12019
2322	9238	9388
2241	2572	3102

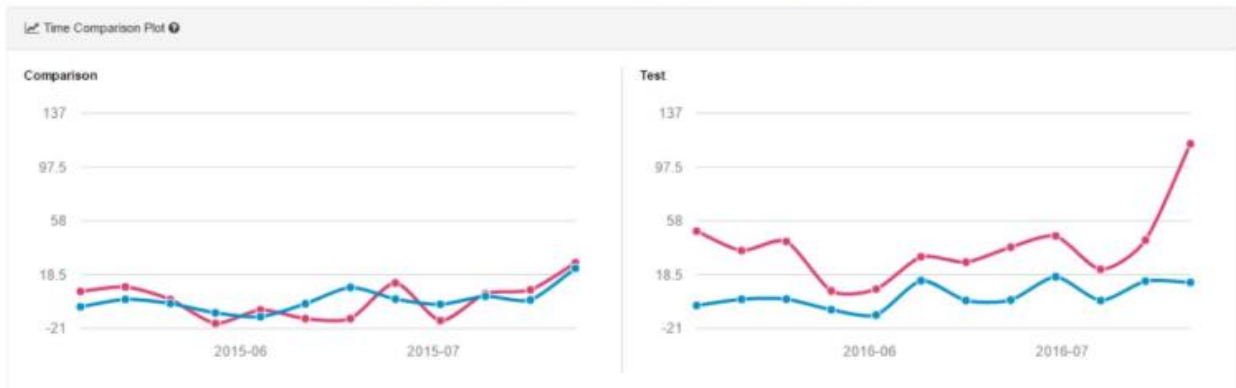
## Step 4: Analysis and Writeup

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:

- What is your recommendation - Should the company roll out the updated menu to all stores?
  - Profit margin would be more than 18%, so yes.
- What is the lift from the new menu for West and Central regions (include statistical significance)?
  - For west region – 36.6% with statistical significance of 99.5%.
  - For Central - 43.2% with Statistical significance of 99.6%





3. What is the lift from the new menu overall?
- Central region 39.9% with significant of 100%

