

Project: Analyzing a Market Test

Plan Your Analysis

1. What is the performance metric you'll use to evaluate the results of your test?
Gross margin will be used to evaluate the results of the test.
2. What is the test period?
The test period of 12 weeks starting from (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 by weeks.

Clean Up Your Data

The week, weekstart, weekend are added to calculate the weekly traffic and sales for each store.

Treatment_Store dataset is then introduced to create a list of control and treatment stores.

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 constant variables
2. What is the correlation between your each potential control variable and your performance metric?
AvgMonthSales has high correlation of 0.99 with the performance metric, i.e. Sum of Gross Margin

Pearson Correlation Analysis

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?
AvgMonthSales will be used together with Trend and Seasonality when matching treatment and control stores.

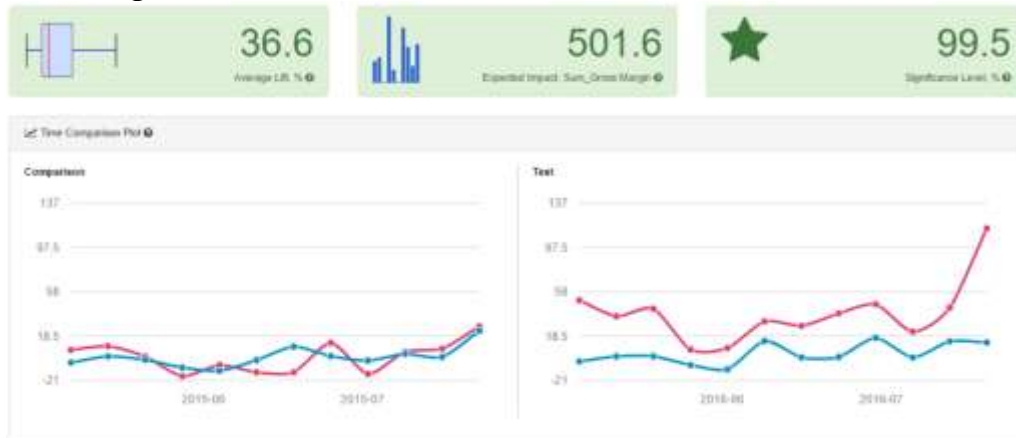
4. Please fill out the table below with your treatment and control stores pairs:

| 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 |
| 2241 | 2572 | 3102 |

Analysis and Writeup

- 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.
- What is the lift from the new menu for West and Central regions (include statistical significance)?
The lift for West region is 36.6% with statistical significance of 99.5%
The lift for Central region is 39.9% with statistical significance of 100%.
- What is the lift from the new menu overall?
The lift for the new menu overall is 43.2% with a statistical significance of 99.6%.

West Region



Central Region



Overall

