

Project: Analyzing a Market Test

Step 1: Plan Your Analysis

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

Ans. The performance matrix for this business problem will be the total of gross margins. This will indicate if your profit surpasses the marketing budget went in the to market the new menu.

2. What is the test period?

Ans. The test period starts from 2016-April-29 and ends on 2016-july-21 which is 12 weeks.

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

Ans. The data should be aggregated on a week level.

Step 2: Clean Up Your Data

The first step is to combine both datasets. After combining RoundRoasterTransaction and Round-Roaster-Store we get data of 76 weeks (06-02-15) to (21-07-2016). The A/B testing needs data of 52 weeks.

The Week, Week_Start, and ProductFlag are used to calculate the weekly traffic and sales per store. The Dataset of 12 weeks is needed to calculate seasonality and each test periods.

Step 3: Match Treatment and Control Units

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

Ans. AvgMonthSale and Square Feet could be considered due to low correlation Square Feet is not used.

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

Ans. AvgMonthSales has a correlation of 0.99 while Square Feet has a correlation of -0.046 against sum of the gross margin using the Pearson Correlation Analysis learned earlier in the course.

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

Ans. AvgMonthSale, Trend and Seasonality will be used.

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:

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

Ans. Due to the increase in gross margins per store from \$26687.45 to \$17978.67, which is more than 18%, the company should roll out the updated menus to all the stores.

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

Ans. The Central region has a lift of 36.6% with a statistic significance of 99.5% and the West region has a lift of 39.9% with a statistic significance of 100%

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

Ans. The Overall lift is 43.2% with a statistic significance of 99.6%.

