

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?

Gross margin will be used as performance metrics to evaluate the result. The predicted impact to profitability should be enough to justify the increased marketing budget: at least 18% increase in profit growth compared to the comparative period while compared to the control stores

2. What is the test period?

The test period is 4/29/2016 – 7/21/2016 (12 weeks)

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

The data should be aggregated on a 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.

AvgMonthSales and Sq_Ft should be considered as control variable apart from trend and seasonality.

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

The correlation of AvgMonthSales and Sq_Ft on gross margin is:

- AvgMonthSales = 0.85
- Sq_Ft = -0.086

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

Based on the correlation coefficient - AvgMonthSales will be used to match treatment and control stores. Also, AvgMonthSales is statistically significant because the p-value < 0.05

4. 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
1700	2014	1630
1712	8162	7434
2288	9081	2568
2293	12219	9524
2301	3102	9238
2322	2409	3235
2341	12536	2383

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?

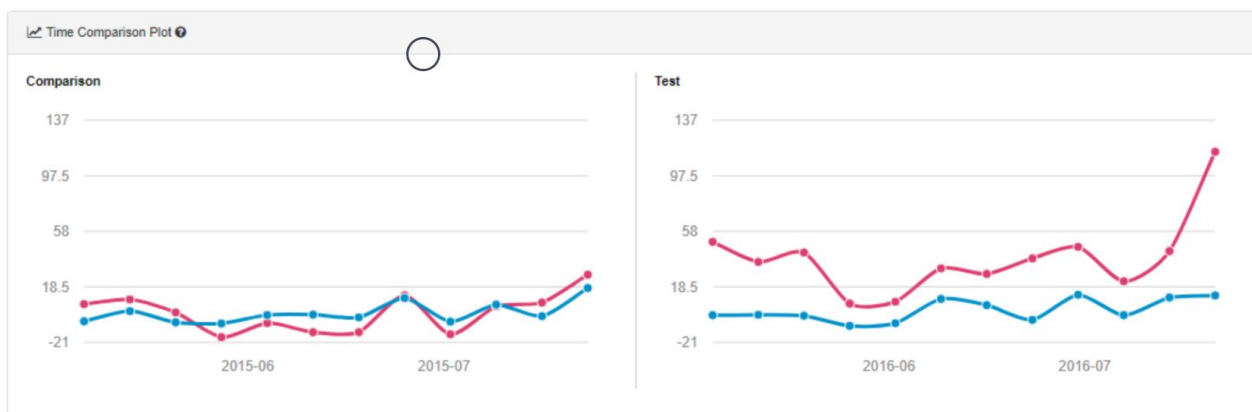
Yes, the company should roll out the updated menu to all stores

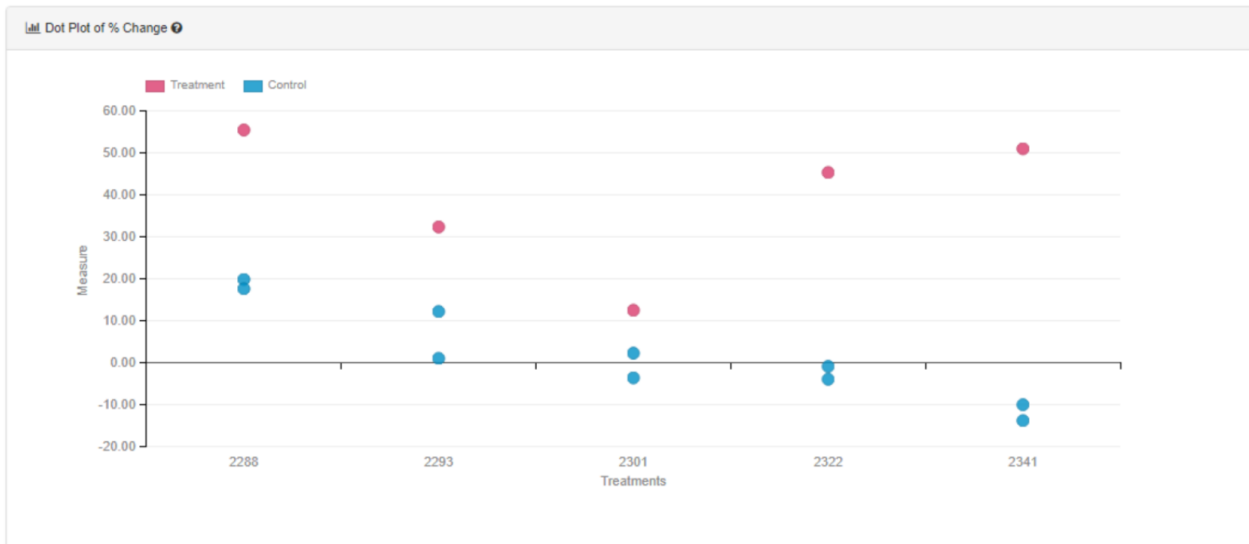
2. What is the lift from the new menu for West and Central regions (include statistical significance)?

The Lift and Statistical Significance is below:

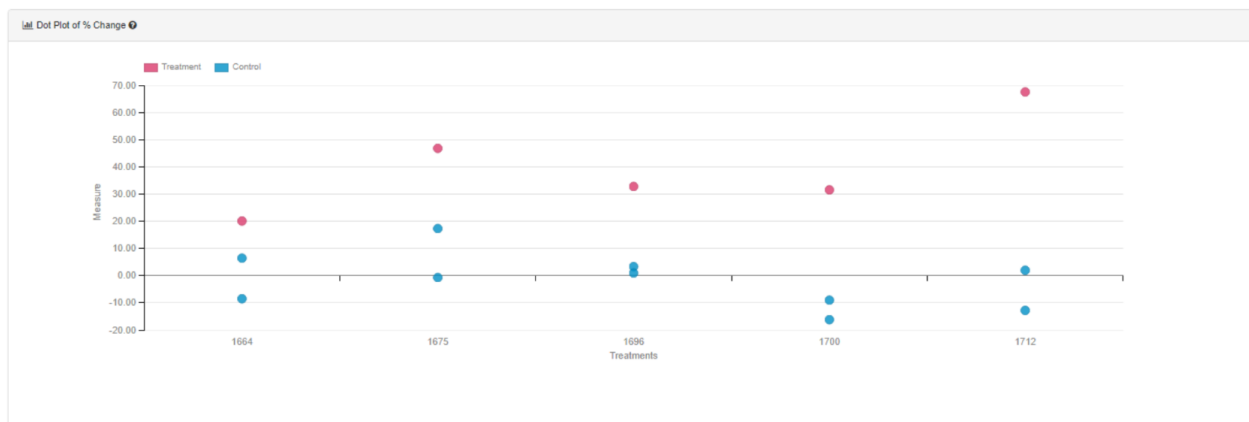
Region	Lift	Statistical Significance
West	37.9%	99.6%
Central	43.5%	99.5%

West:





Central:



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

There is a 40.7% lift from the new menu overall