

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 is the performance metric used to evaluate the results of the test. 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; otherwise known as incremental lift. In the data, profit is represented in the gross margin variable.

2. What is the test period?

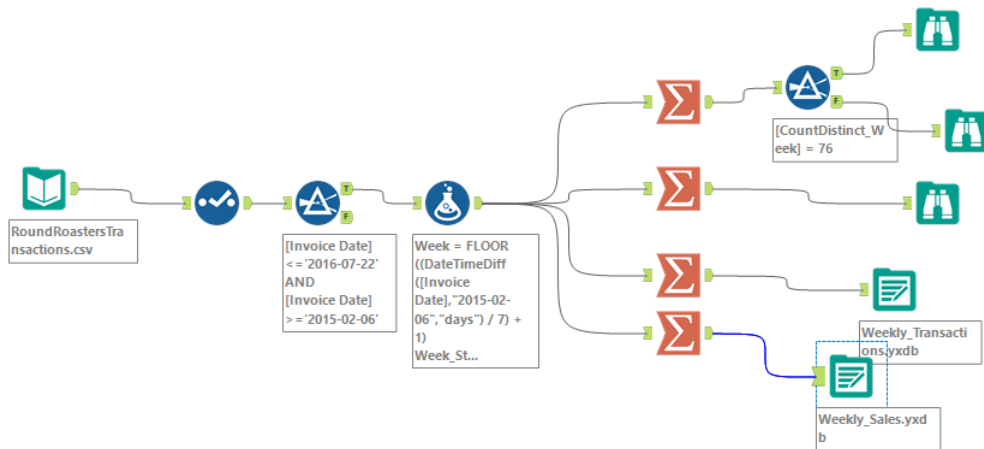
2016-April-29 to 2016-July-21, a period of 12 weeks was used as test period. Where five stores in each of the test markets offered the updated menu along with television advertising.

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.



Filtered Invoice date to within the test period and outputted the aggregated data as a separate file to reduce development time.

Step 3: Match Treatment and Control Units

In this step, you should create the trend and seasonality variables, and use them along with your 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.

AvgMonthlySales, Trend, Seasonality and Sq_Ft are potential control variables.

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

Kindly see below table

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4 records displayed, 5 fields, 1,622 bytes

Table Profile

5 of 5 Fields | Cell Viewer

Record	FieldName	Total Gross Margin	Total Sales	Sq_Ft	AvgMonthSales
1	Total Gross Margin	1	0.999355	-0.024066	0.990878
2	Total Sales	0.999355	1	-0.027502	0.990796
3	Sq_Ft	-0.024066	-0.027502	1	-0.046967
4	AvgMonthSales	0.990878	0.990796	-0.046967	1

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

AvgMonthlySales, Trend, and Seasonality are used when matching treatment and control stores, Sq_Ft is ignored because of its poor correlation.

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)

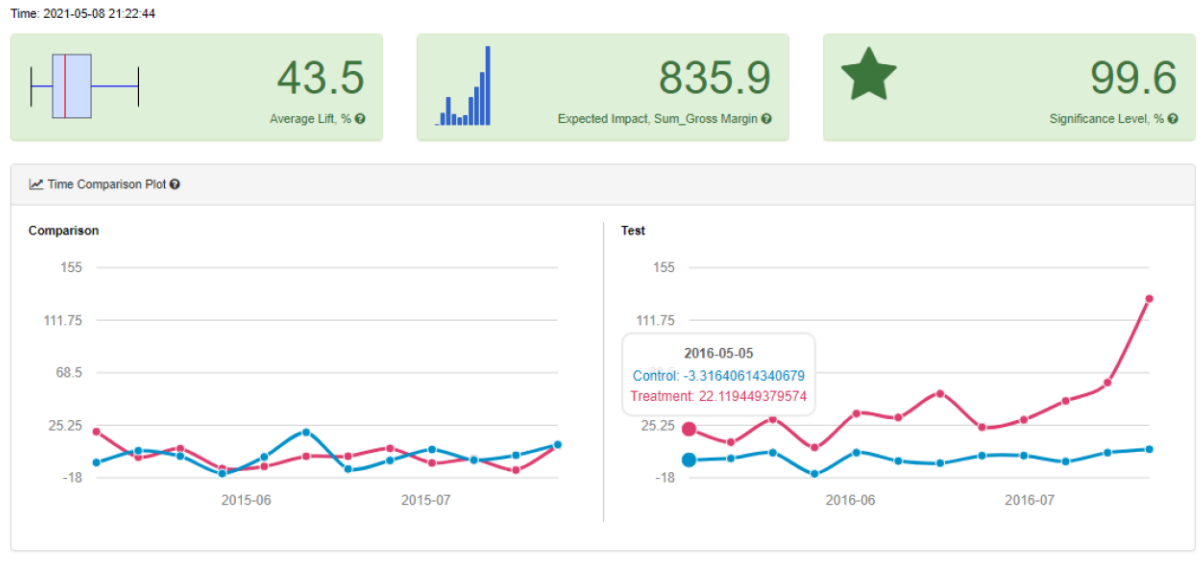
Answer these questions. Be sure to include visualizations from your analysis:

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

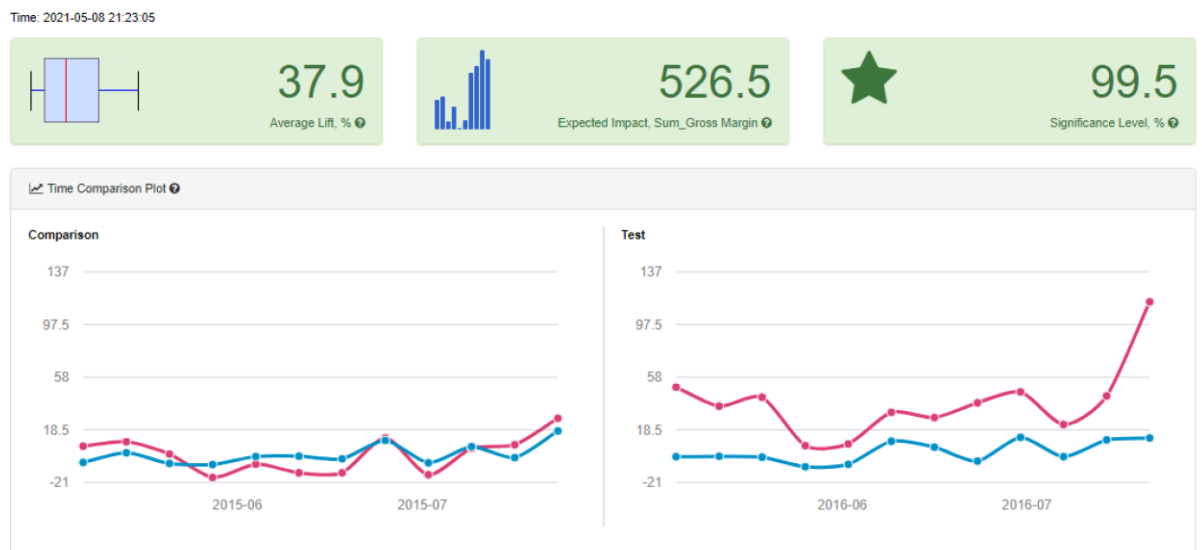
I Recommend the company to roll out the new Menus. Analysis from the test shows that rolling out new menus has a 40.7% lift and 100% significance and will increase the gross margin by \$681.2 per store.

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

Central: Rolling out new menus in central region shows a 43.5% lift, 99.6% significance and will increase the gross margin by \$835.9 per store.



West: Rolling out new menus in west region shows a 37.9% lift, 99.5% significance and will increase the gross margin by \$526.5 per store.

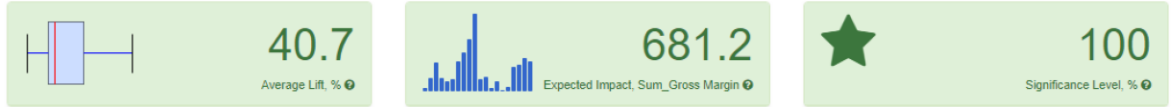


3. What is the lift from the new menu overall?

The overall lift for rolling out new menus is 40.7% lift, 100% significance and will

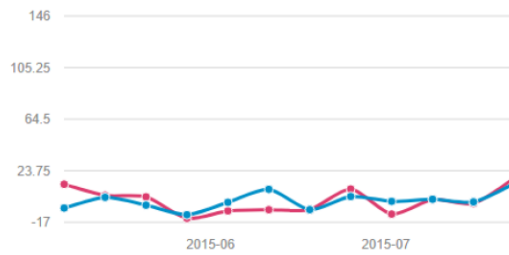
increase the gross margin by \$681.2 per store.

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Time Comparison Plot

Comparison



Test

