# 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?

The performance metric used to evaluate the results of the test will be the Profit or Gross margin

2. What is the test period?

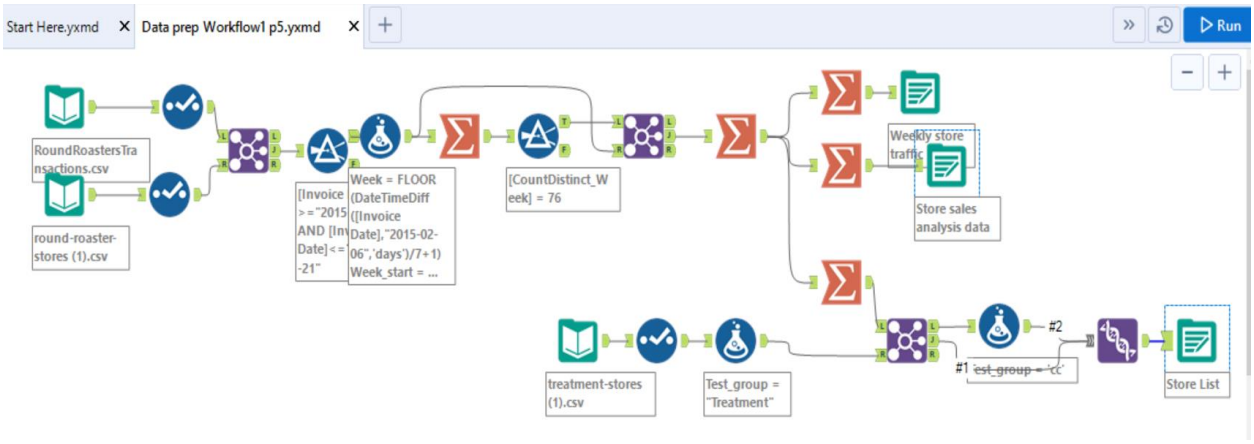
The test period is 2016-April-29 to 2016-July-21.

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

The data will be aggregated weekly.

## 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.*




Using the above workflow in Alteryx, three tables were generated: `

1. Weekly store traffic
2. Store list
3. Store sales analysis

## 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.

Sq_Ft and AvgMonthSales will be considered as the control variables.

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

*Full Correlation Matrix*

| | Sum_Sum_Gross.Margin | Sq_Ft | AvgMonthSales |
|---|---|---|---|
| Sum_Sum_Gross.Margin | 1.000000 | -0.016284 | 0.786797 |
| Sq_Ft | -0.016284 | 1.000000 | -0.046967 |
| AvgMonthSales | 0.786797 | -0.046967 | 1.000000 |

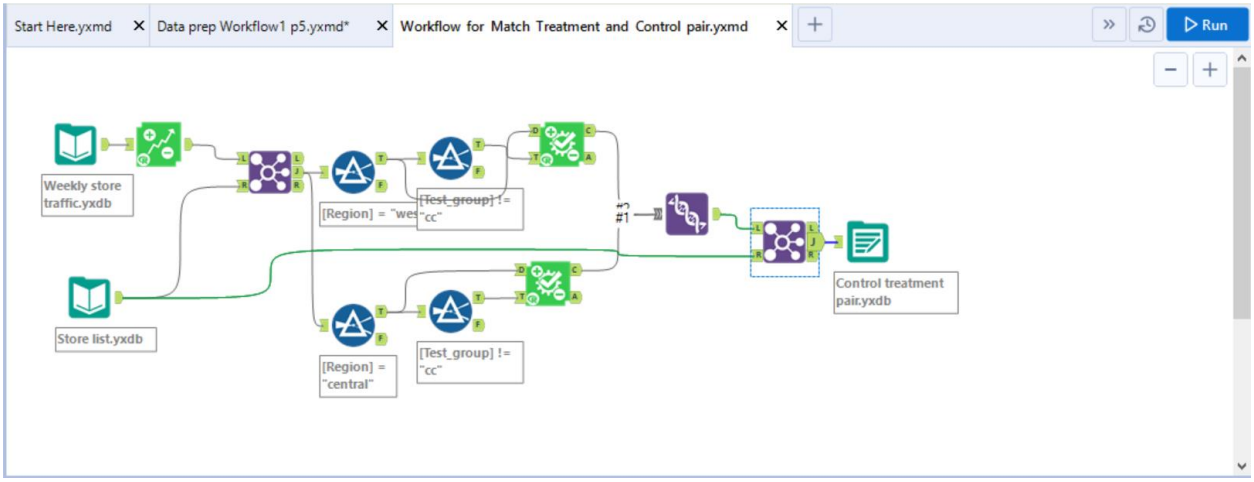
From the diagram above, AvgMonthSales has a high correlation of 0.79 with the SumGrossMargin while Sq_Ft has a correlation of -0.02

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

I will use AvgMonthSales with Trend and Seasonality to match the 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 | 7484 | 7162 |
| 1675 | 8162 | 2114 |
| 1696 | 7284 | 1863 |
| 1700 | 7384 | 1662 |
| 1712 | 7434 | 6992 |
| 2288 | 2568 | 9081 |
| 2293 | 9918 | 11768 |
| 2301 | 3185 | 12536 |
| 2322 | 9388 | 9238 |
| 2341 | 9488 | 11368 |



# Step 4: Analysis and Writeup

*Conduct your A/B analysis and create a short report outlining your results and recommendations. (250 words limit)*

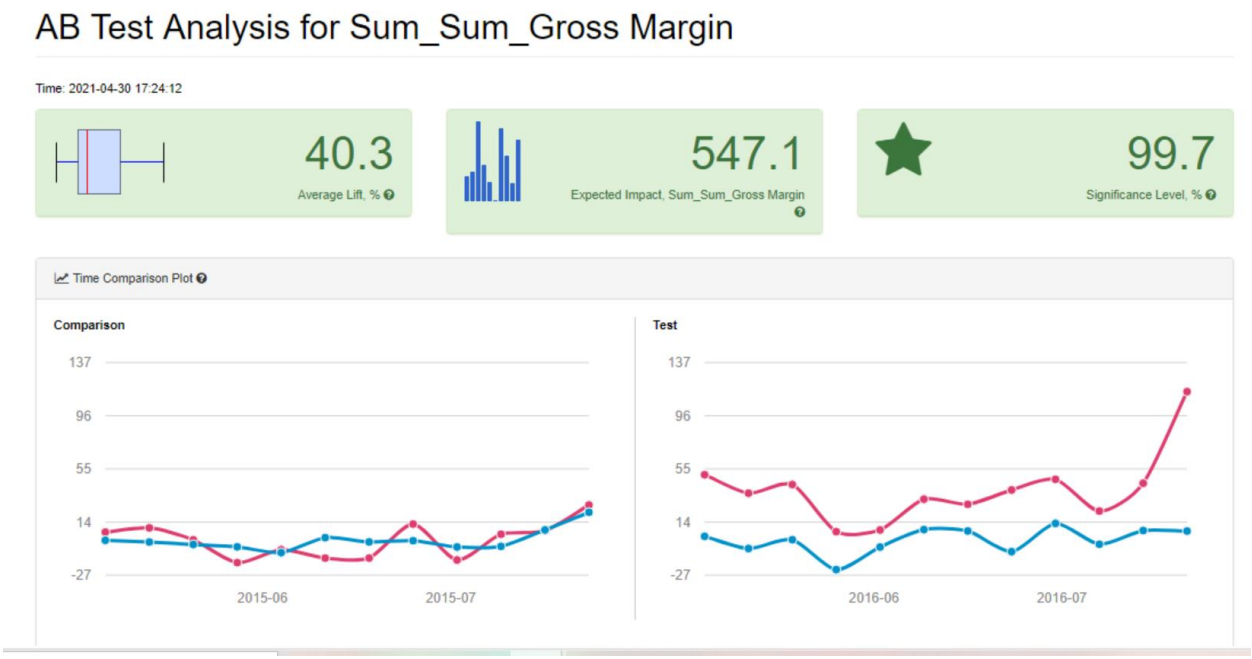
*Answer these questions. Be sure to include visualizations from your analysis:*

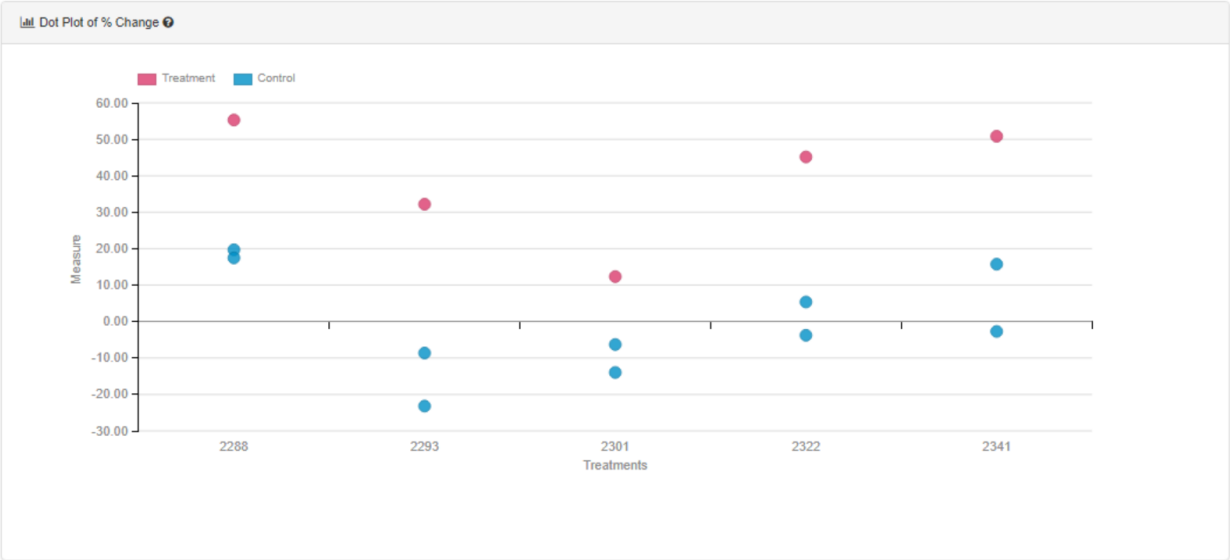
1. What is your recommendation - Should the company roll out the updated menu to all stores?

Yes, I will recommend that the company should roll out the updated menu to all stores. This is because the lift from the new menu for Central and West Region exceeded the 18% increase in profit growth.

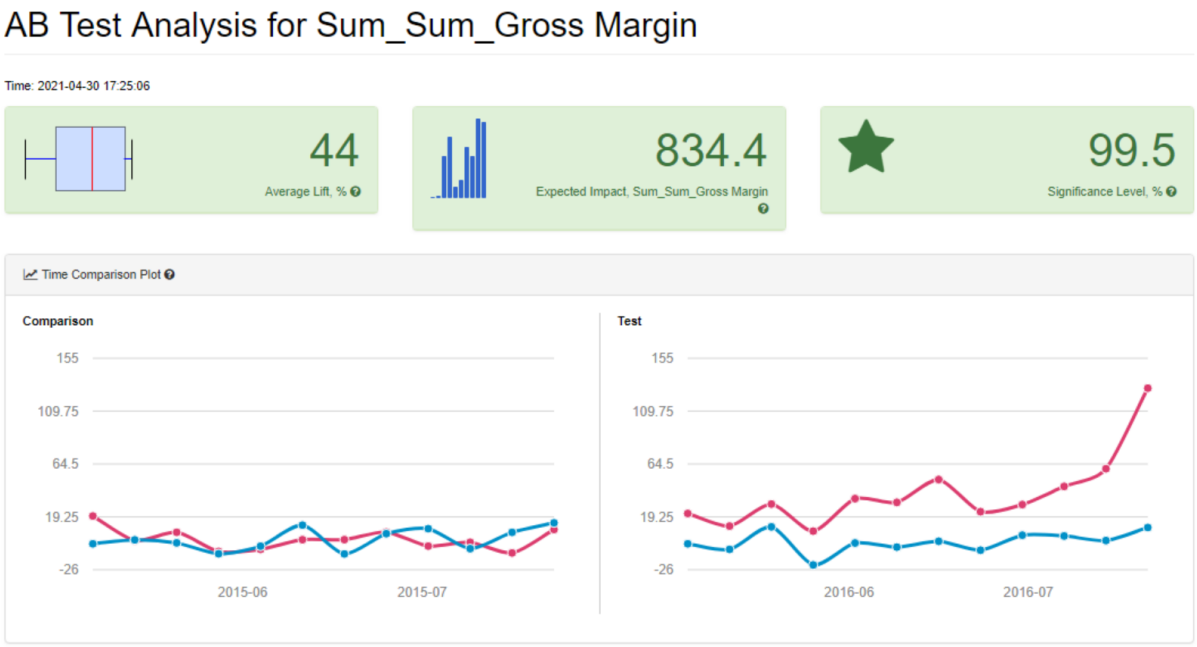
2. What is the lift from the new menu for West and Central regions (include statistical significance)?

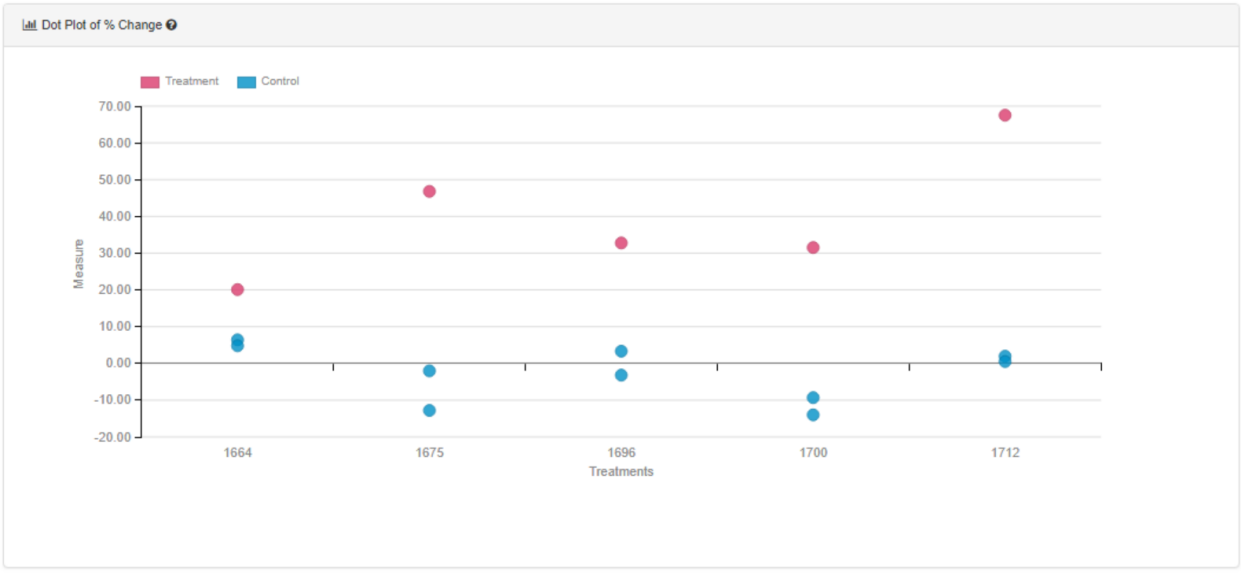
For the West region: The average lift is 40% and Significance level is 99.7%. The expected impact during the test period will be $547.1 per week per store on average.





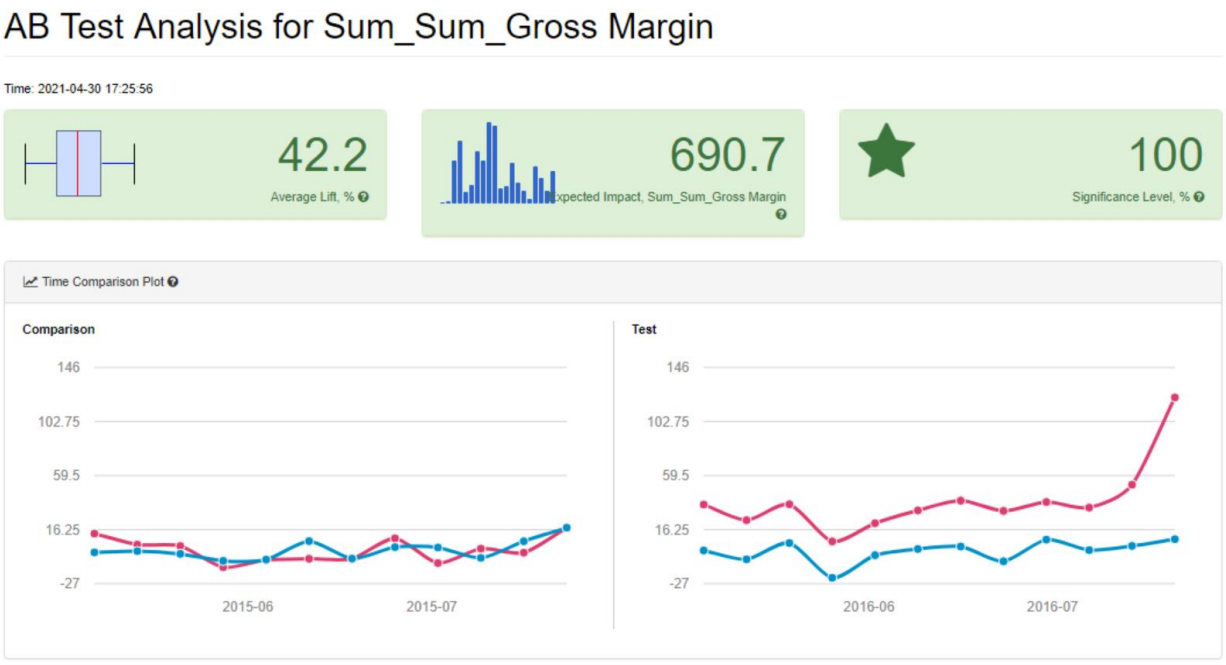

For the Central region: The average lift is 44% and Significance level is 99.5%. The expected impact during the test period will be $834.4 per week per store on average.

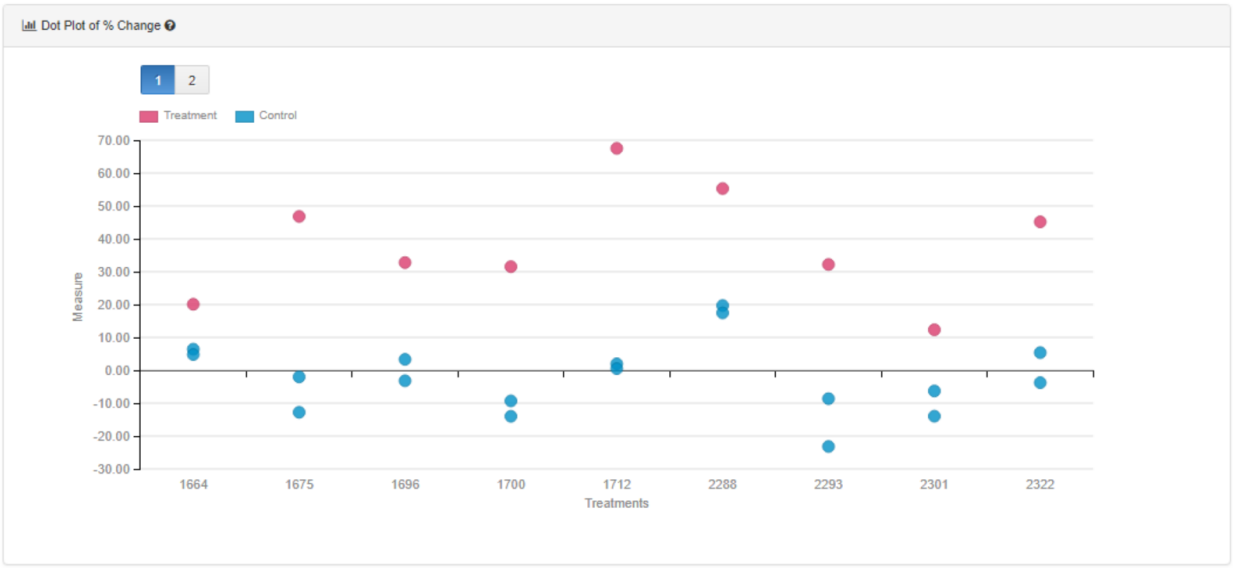





3. What is the lift from the new menu overall?

For the new menu overall: The average lift is 42% and Significance level is 100%. The expected impact during the test period will be $609.7 per week per store on average.






The figure below shows the Alteryx workflow for AB Test