Project: Analyzing a Market Test

Complete each section. When you are ready, save your file as a PDF document and submit it here.

Step 1: Plan Your Analysis

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

We would be using the Gross Margin performance metric.

2. What is the test period?

The test period is between 29/04/16 to 21/07/2016.

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

The data would be aggregated at the week 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.

The data has been filtered for 76 weeks. Period considered is between 06/02/2015 to 21/07/2016.

The below new fields have also been added:

- *Week*
- _week*begin*
- _week*end*
- _NewProduct*Flag*

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.

Possible control variables are as below:

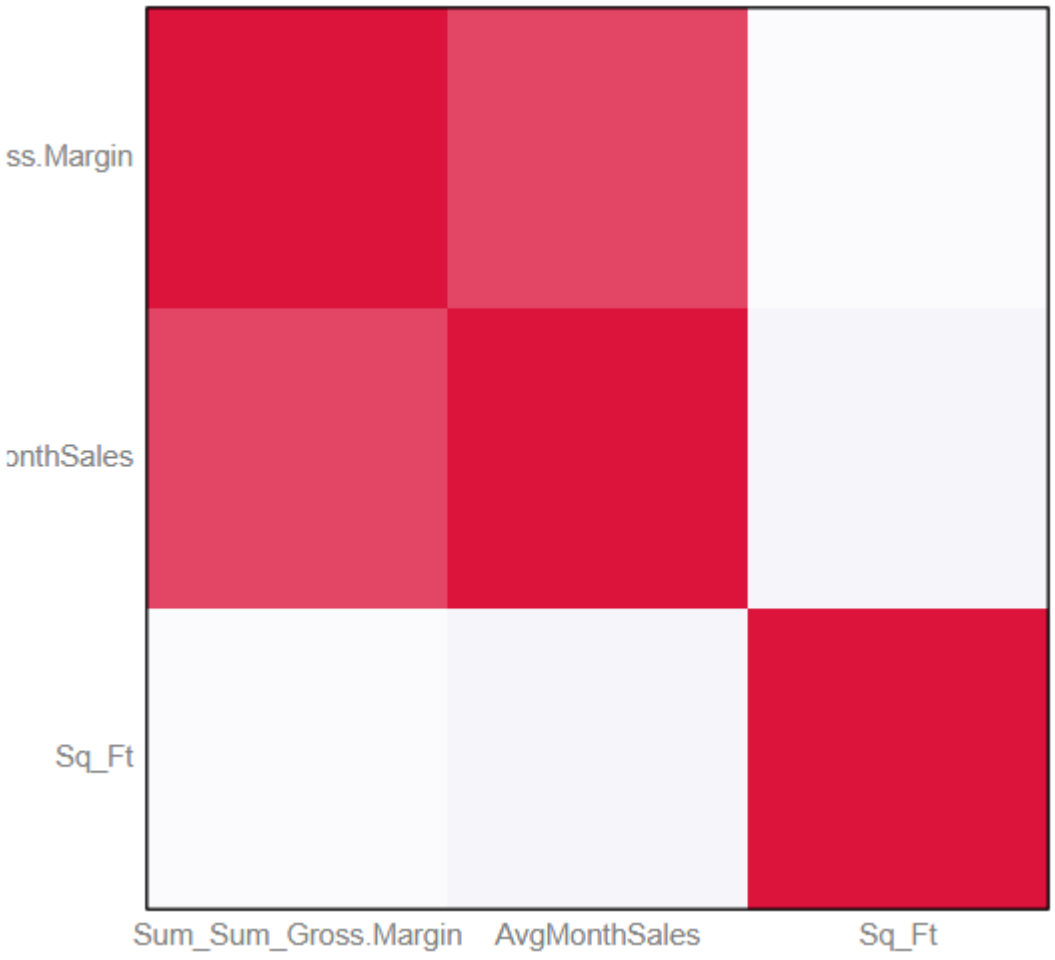
- Trend
- Seasonality
- AvgMonthSales
- Sq_ft

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

    - Monthly sales seems to have a high co-relation with Gross Margin

    - Sq_Ft has a low co-relation with Gross Margin

The graphs from the Association Analysis are as below:



Pearson Correlation Analysis

Focused Analysis on Field Sum_Sum_Gross.Margin

	Association Measure	p-value
AvgMonthSales	0.790358	0.000000 ***
Sq_Ft	-0.019345	0.051796 .

Full Correlation Matrix

	Sum_Sum_Gross.Margin	Sq_Ft	AvgMonthSales
Sum_Sum_Gross.Margin	1.000000	-0.019345	0.790358
Sq_Ft	-0.019345	1.000000	-0.046967
AvgMonthSales	0.790358	-0.046967	1.000000

Matrix of Corresponding p-values

	Sum_Sum_Gross.Margin	Sq_Ft	AvgMonthSales
Sum_Sum_Gross.Margin		5.1796e-02	0.0000e+00
Sq_Ft	5.1796e-02		2.3119e-06
AvgMonthSales	0.0000e+00	2.3119e-06	

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

The below control variables are used to match control and treatment stores:

- AvgMonthSales
- Trend
- Seasonality

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

Treatment Store	Control Store 1	Control Store 2
1664	1964	7162
1675	1807	7584
1696	1863	7334
1700	7037	2014
1712	8162	2114
2288	2568	9188
2293	12686	9639
2301	9238	12019
2322	3235	9388
2341	2572	3102

Step 4: Analysis and Writeup

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

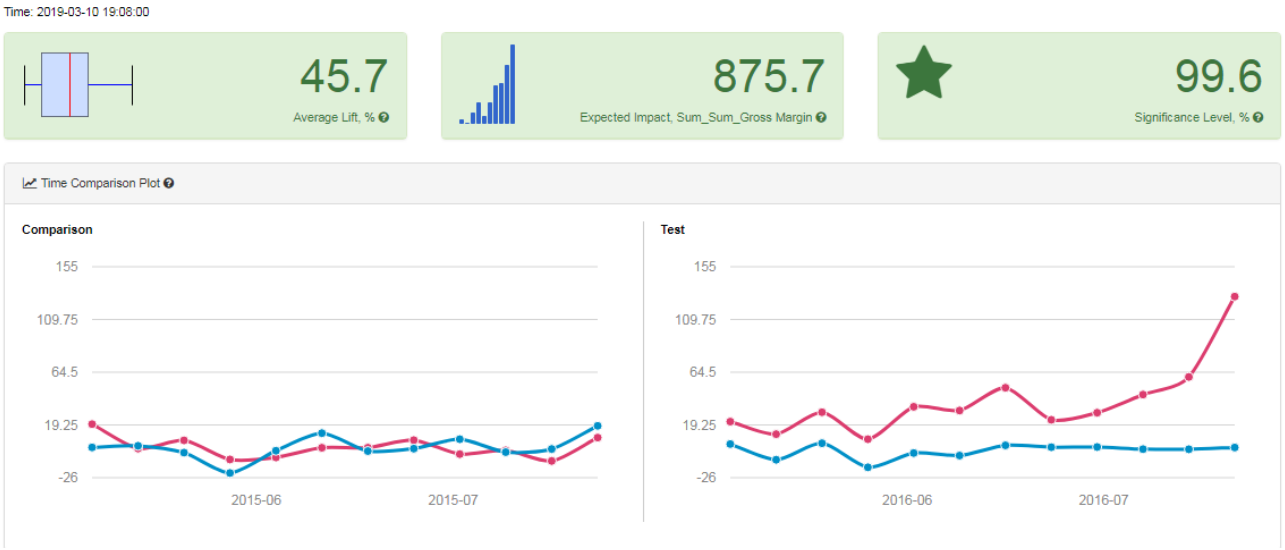
Answer these questions. Be sure to include visualizations from your analysis:

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

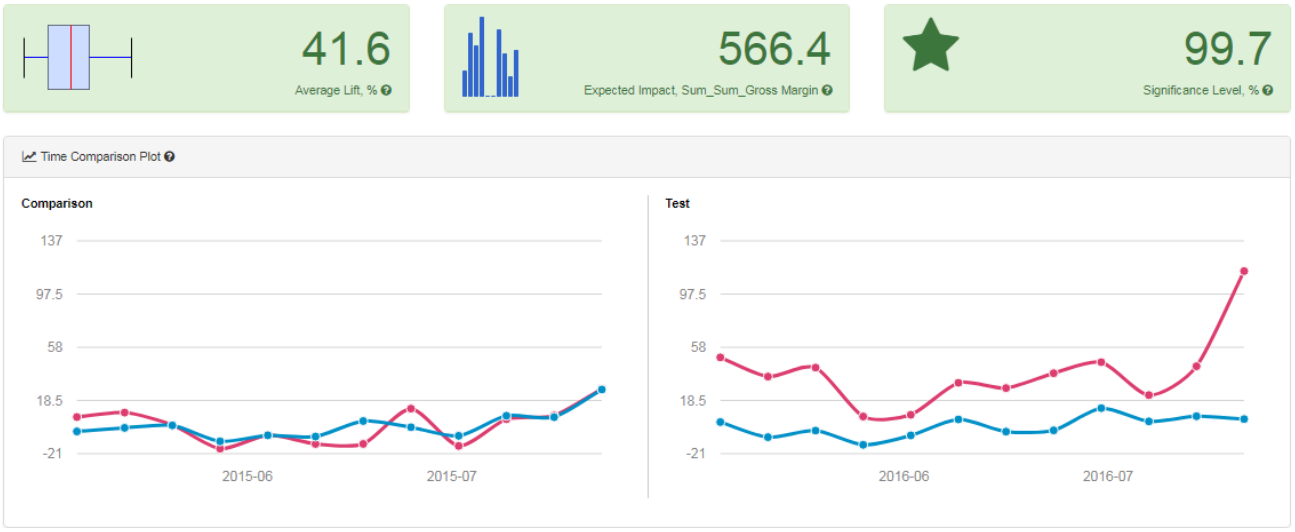
My recommendation is to go ahead with the updated menu to all stores. The lift is more than 40% and is statistically significant.

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

Central Region: The lift is more than 40% and is statistically significant.

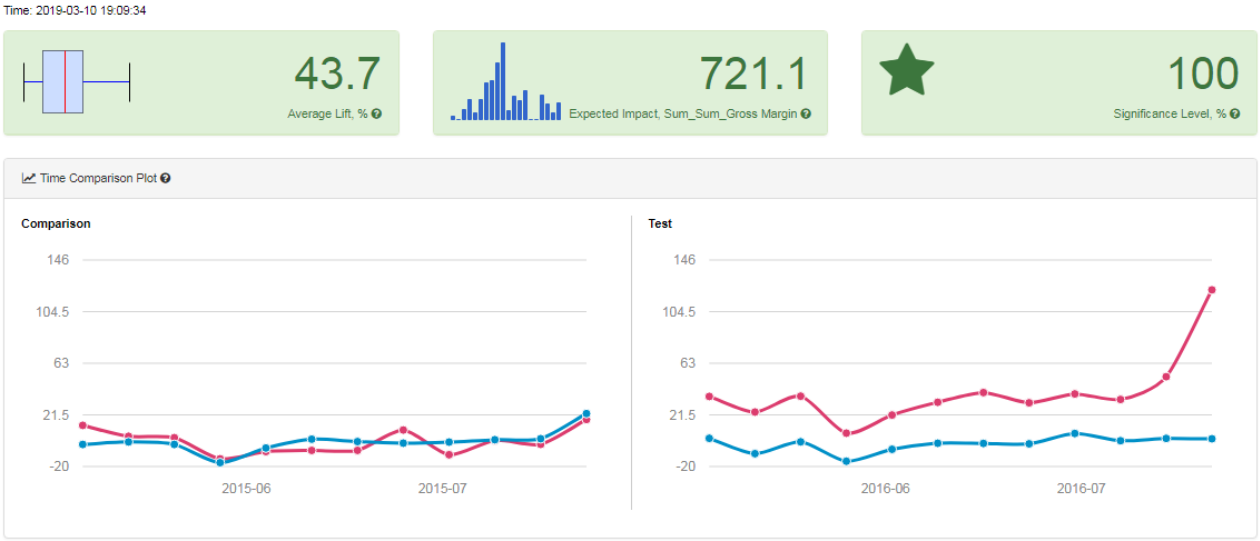


West Region: The lift is more than 40% and is statistically significant.



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

The list is more than 40% across all treatment stores.

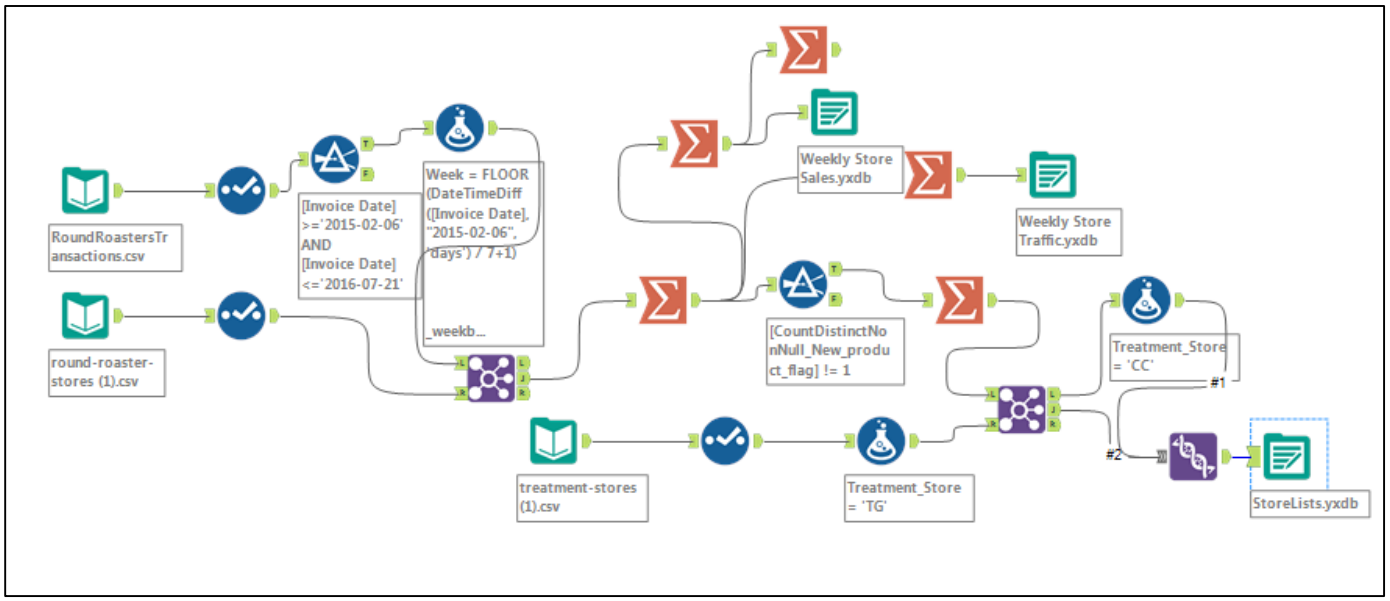


Before you Submit

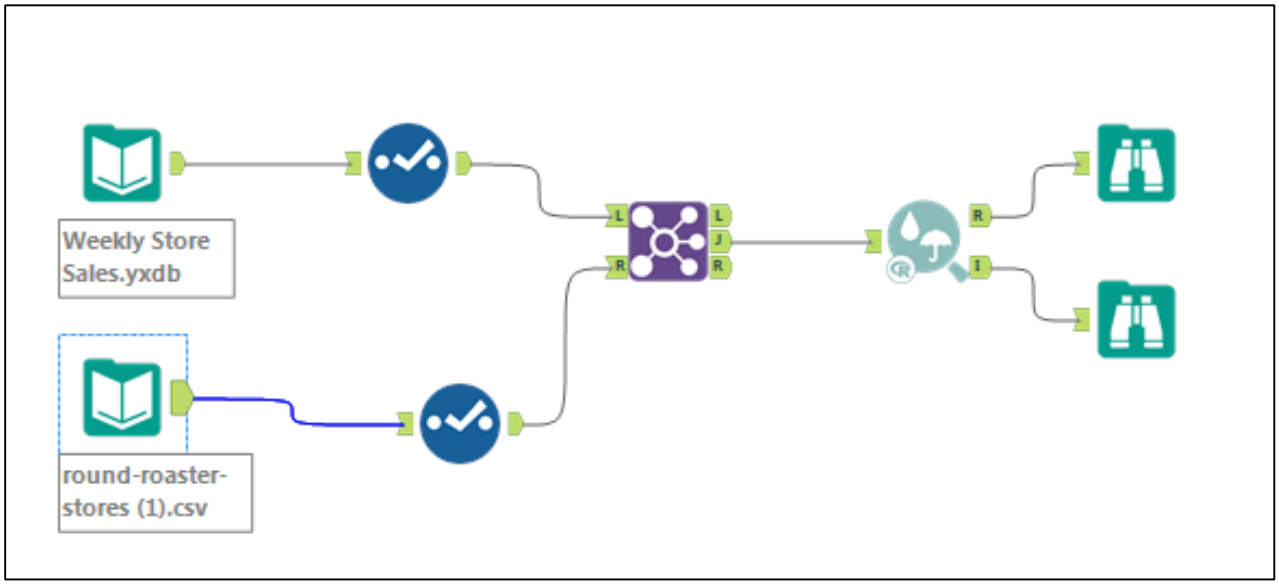
Please check your answers against the requirements of the project dictated by the rubric here. Reviewers will use this rubric to grade your project.

Alteryx Flows:

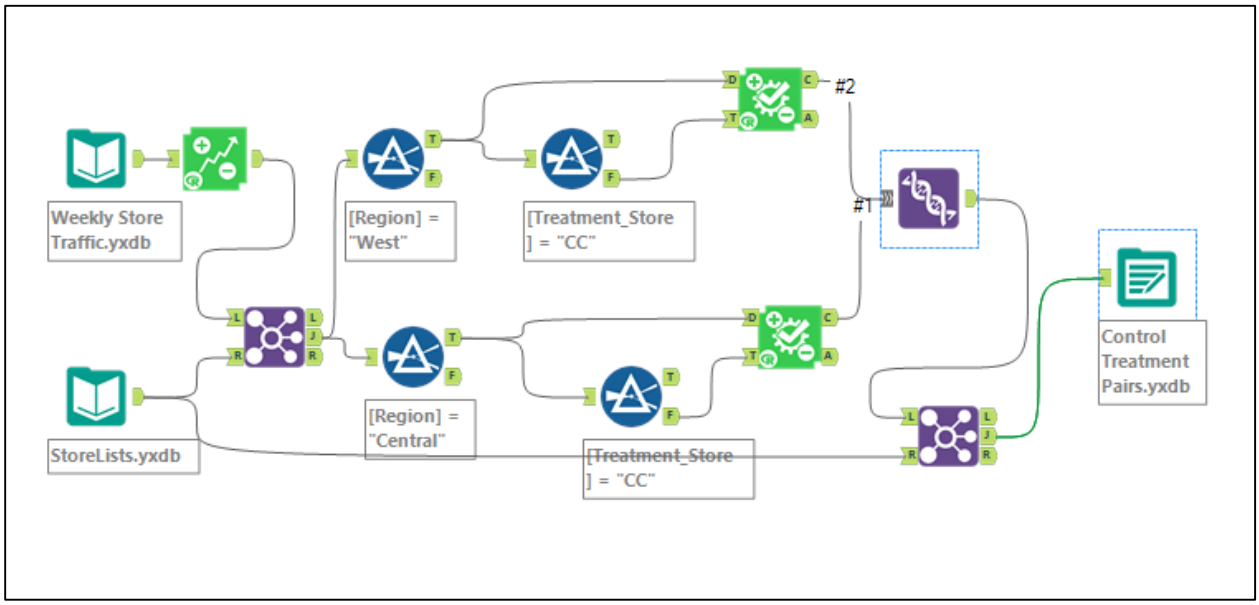
1) Data Preparation



2) Association Analysis



3) AB Controls



4) AB Analysis