

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 sum of gross margin will be used as performance metric.

2. What is the test period?

The Test period is 12 weeks From 29-Apr-2016 to 21-Jul-2016

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

- Data files joined and converted to the appropriate type.
- Data filtered and new fields being made such as **Week, Week_Start, Week_End**.
- Data aggregated to weekly level.

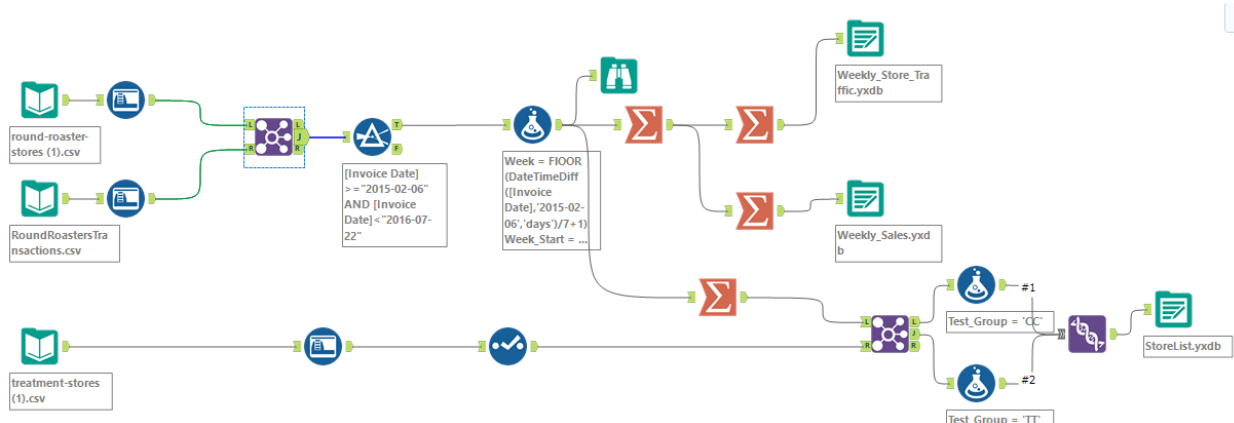


Figure 1: Workflow for the data preparations

Step 3: Match Treatment and Control Units

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

The variables to be considered are **AvgMonthSales** and **Sq_Ft**

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

AvgMonthSales has high correlation of 0.98 with our performance metric.

Sq_Ft has very poor correlation of -0.02 and therefore this variable will not be included in our analysis

Pearson Correlation Analysis

Focused Analysis on Field Sum_Gross.Margin

	Association Measure	p-value	
AvgMonthSales	0.988219	0.00000	****
Sq_Ft	-0.020353	0.81612	

Full Correlation Matrix

	Sum_Gross.Margin	Sq_Ft	AvgMonthSales
Sum_Gross.Margin	1.000000	-0.020353	0.988219
Sq_Ft	-0.020353	1.000000	-0.046967
AvgMonthSales	0.988219	-0.046967	1.000000

Figure 2: Pearson Correlation Analysis

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

AvgMonthSales, Trend and **Seasonality**

- 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

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

Yes, I highly recommend for the company to 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 of the new menu for **West** is 37.9% with statistical significance level of 99.5%

The lift of the new menu for **Central** is 43.5% with statistical significance level of 99.6%

AB Test Analysis for Sum_Sum_Gross Margin

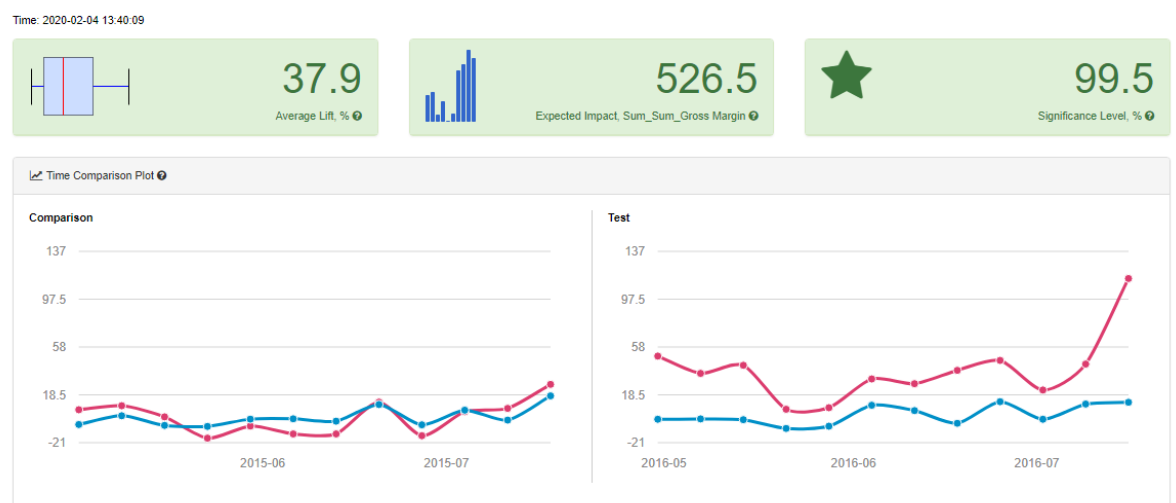


Figure 3: AB Test for West

AB Test Analysis for Sum_Sum_Gross Margin

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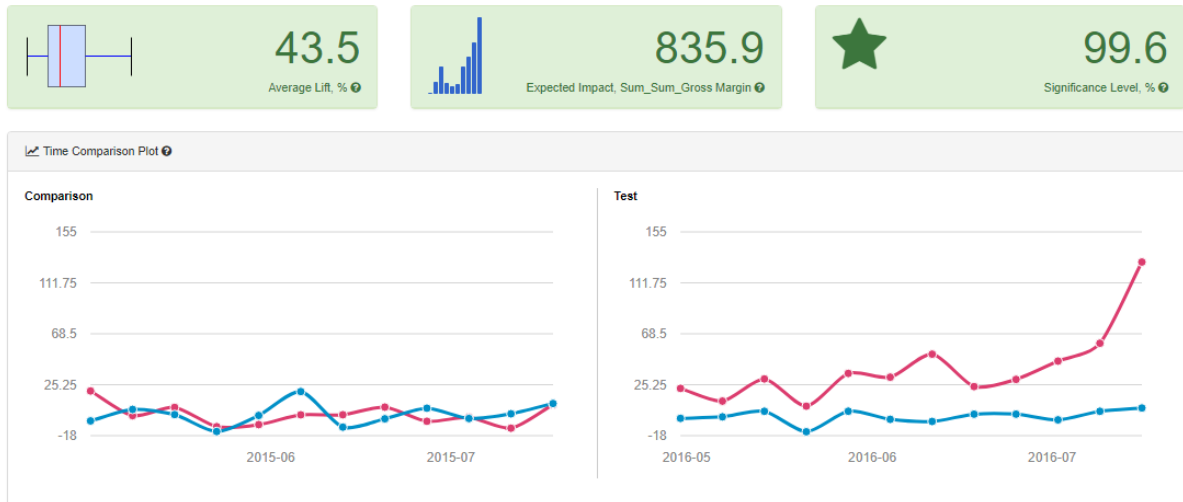


Figure 4: AB test for Central

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

The overall (West & Central) lift of the new menu is 40.7% with statistical significance level of 100%

AB Test Analysis for Sum_Sum_Gross Margin

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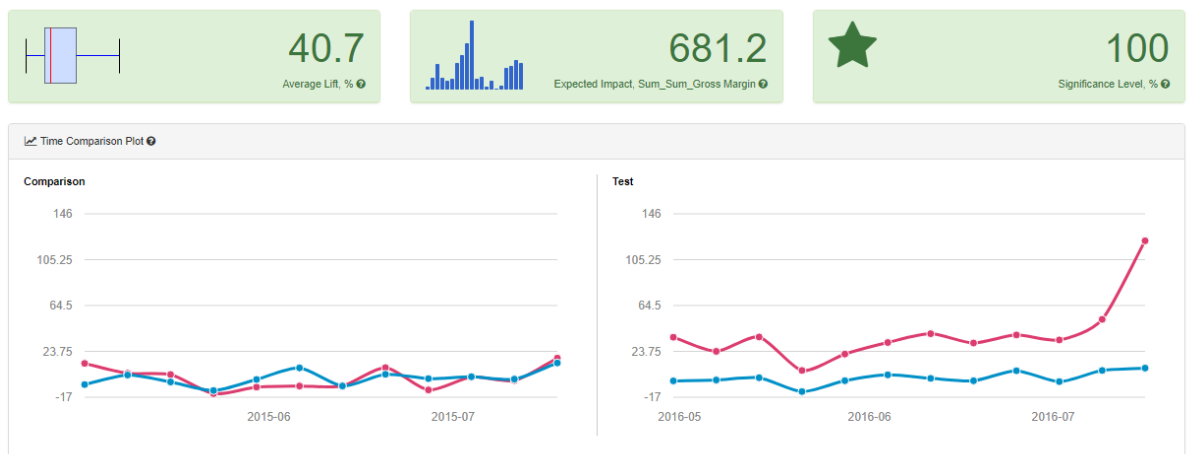


Figure 5: AB test results for both West and Central region

Alteryx workflows:-

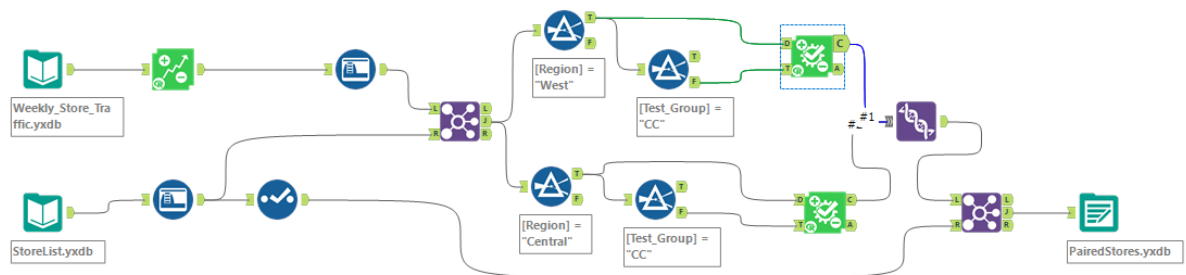


Figure 6: Workflow of pairing control and treatment

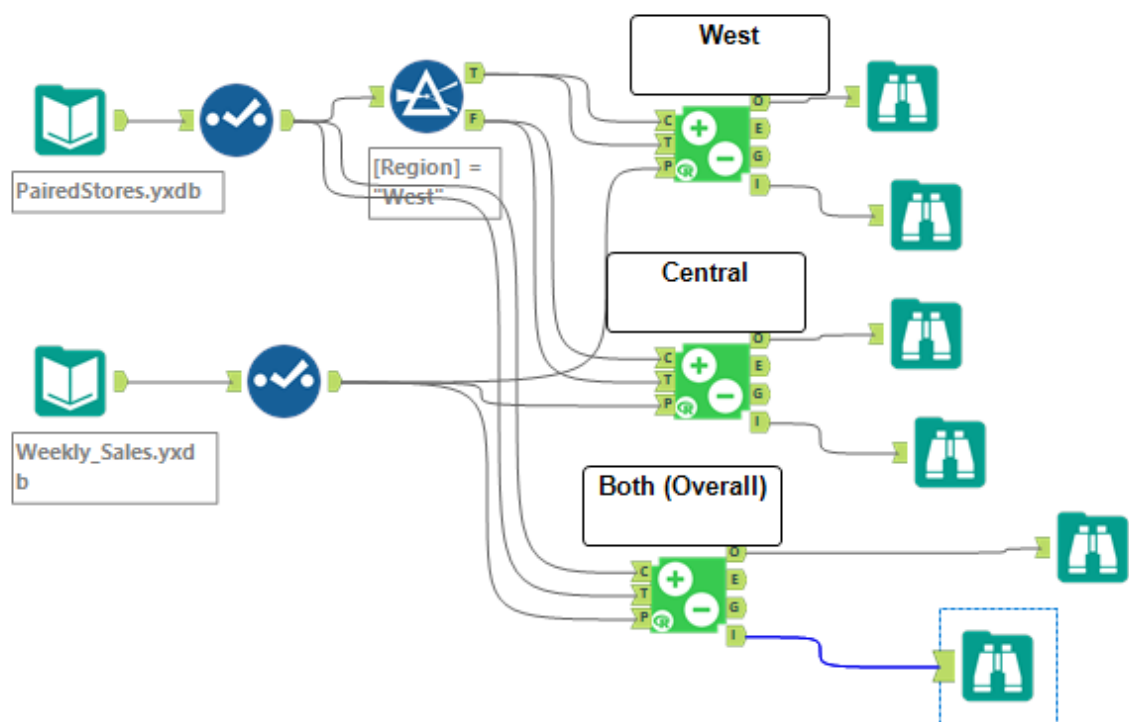


Figure 7: AB test Analysis Workflow