

# 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?

**Answer:**

Sum of gross margin

2. What is the test period?

**Answer:**

12 weeks period – 29<sup>th</sup> April 2016 to 21<sup>st</sup> July 2016.

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

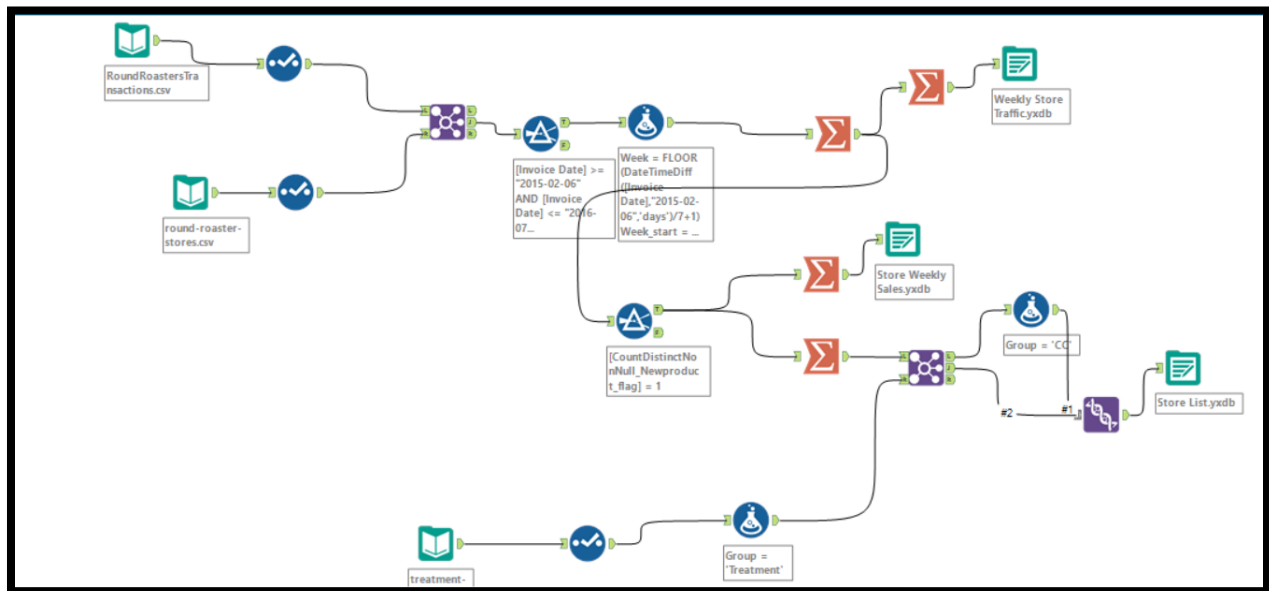
**Answer:**

Weekly level

## Step 2: Clean Up Your Data

As we are given .csv files so it is important to change data format from V\_string to required format. Both the databases are joined. Then, the data is filtered from 2015-02-06 to 2016-07-21 (76 weeks) and new fields 'week', 'week\_start' and 'week\_end' are added using 'Formula' tool to get the weekly traffic and sales for each store.

The above dates are chosen because A/B test requires 52 weeks of data in addition to a minimum of 12 weeks to calculate seasonality and for the period of testing each.



## Step 3: Match Treatment and Control Units

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

**Answer:**

'AvgMonthSales' should be considered as control variable whereas 'Sq\_Ft' should not be considered.

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

**Answer:**

Pearson Correlation Analysis				
Full Correlation Matrix				
	Sum_Sum_Gross.Margin	AvgMonthSales	Sq_Ft	
Sum_Sum_Gross.Margin	1.000000	0.990978	-0.024224	
AvgMonthSales	0.990978	1.000000	-0.046967	
Sq_Ft	-0.024224	-0.046967	1.000000	

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

**Answer:**

'AvgMonthSales' must be used with Trend and Seasonality to match treatment and control stores as it is more correlated with 'Gross Margin' than 'Sq\_ft'.

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

Treatment Store	Control Store 1	Control Store 2
1664	1964	8562
1675	1807	7584
1696	1863	7334
1700	7037	1508
1712	8162	7434
2288	2568	9081
2293	12219	9639
2301	11668	12019
2322	9238	9388
2241	2572	3102

## Step 4: Analysis and Writeup

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

**Answer:**

Yes, the company should roll out the updated menu to all the stores as sum of profit margin increased from \$17,978.67 per store to \$26,687.45 per store during test period (more than 18%)

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

**Answer:**

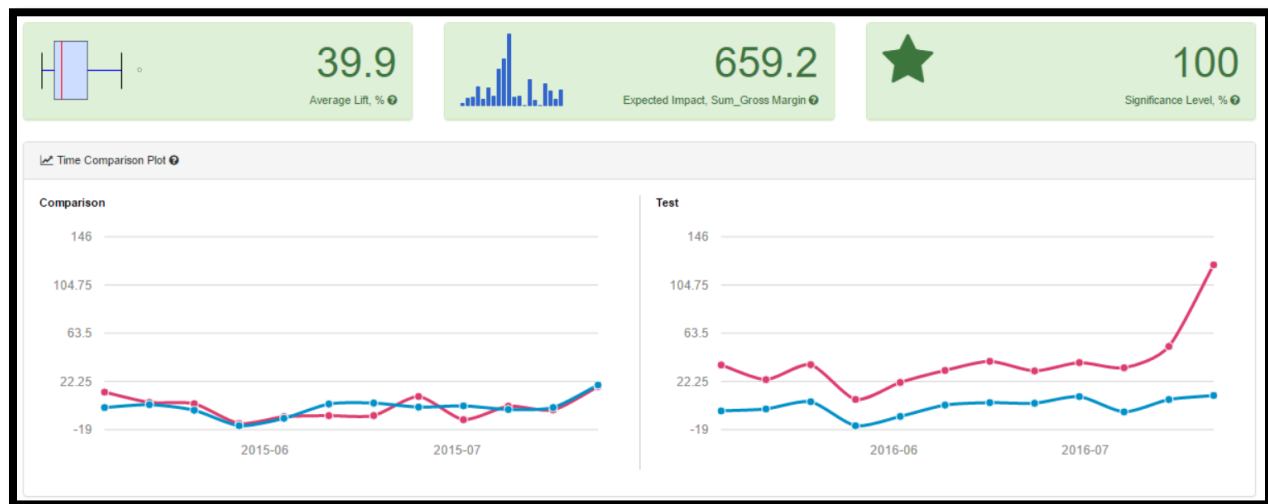
The lift for West region is 36.6% and for Central region is 43.2% with statistical significance of 99.5% and 100% respectively.

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

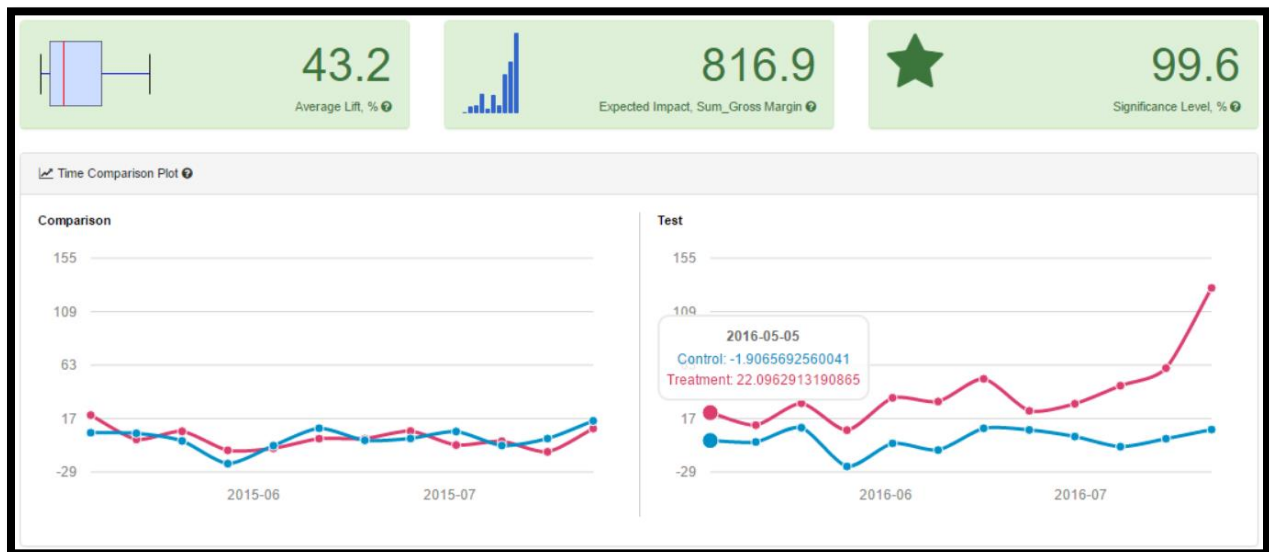
**Answer:**

The lift for the new menu overall is 43.2%.

### Overall



## Central



## West

