

Wilson

Project 5 A/B Testing

Step 1: Plan Your Analysis

1. What is the performance metric you'll use to evaluate the results of your test?
 - a. Sum Gross Margins
2. What is the test period?
 - a. 12 weeks
3. At what level (day, week, month, etc.) should the data be aggregated?
 - a. Weekly

Apart from trend and seasonality...

Pearson Correlation Analysis

Full Correlation Matrix

	Count	Sum_Sum_Gross.Margin	Sum_Sum_Sales	Sq_Ft	AvgMonthSales
Count	1.0000000	0.9743164	0.9733594	0.0034498	0.7540005
Sum_Sum_Gross.Margin	0.9743164	1.0000000	0.9986662	-0.0193447	0.7903580
Sum_Sum_Sales	0.9733594	0.9986662	1.0000000	-0.0220363	0.7883168
Sq_Ft	0.0034498	-0.0193447	-0.0220363	1.0000000	-0.0469674
AvgMonthSales	0.7540005	0.7903580	0.7883168	-0.0469674	1.0000000

Matrix of Corresponding p-values

	Count	Sum_Sum_Gross.Margin	Sum_Sum_Sales	Sq_Ft	AvgMonthSales
Count		0.0000e+00	0.0000e+00	7.2874e-01	0.0000e+00
Sum_Sum_Gross.Margin	0.0000e+00		0.0000e+00	5.1796e-02	0.0000e+00
Sum_Sum_Sales	0.0000e+00	0.0000e+00		2.6726e-02	0.0000e+00
Sq_Ft	7.2874e-01	5.1796e-02	2.6726e-02		2.3119e-06
AvgMonthSales	0.0000e+00	0.0000e+00	0.0000e+00	2.3119e-06	

1. What control variables should be considered? Note: Only consider variables in the RoundRoastersStore file.
 - 1) AvgMonthSales, Sq Ft
2. What is the correlation between your each potential control variable and your performance metric?
 - 2) Correlation between AvgMonthSales and Sum_Sum_Gross.Margin is .79 which is indicates positive correlation and will be included.
 - 3) Correlation between Sq_Ft and Sum_Sum_Gross.Margin is low negative therefore no correlation and is excluded from match pairing.

3. What control variables will you use to match treatment and control stores?
1) AvgMonthSales
4. Please fill out the table below with your treatment and control stores pairs:

Treatment Store	Control Store 1	Control Store 2
2288	9081	2568
2293	12219	9524
2301	3102	9238
2322	2409	3235
2341	12536	2383
1664	7162	8112
1675	1580	1807
1696	1863	1964
1700	2014	1630
1712	8162	7434

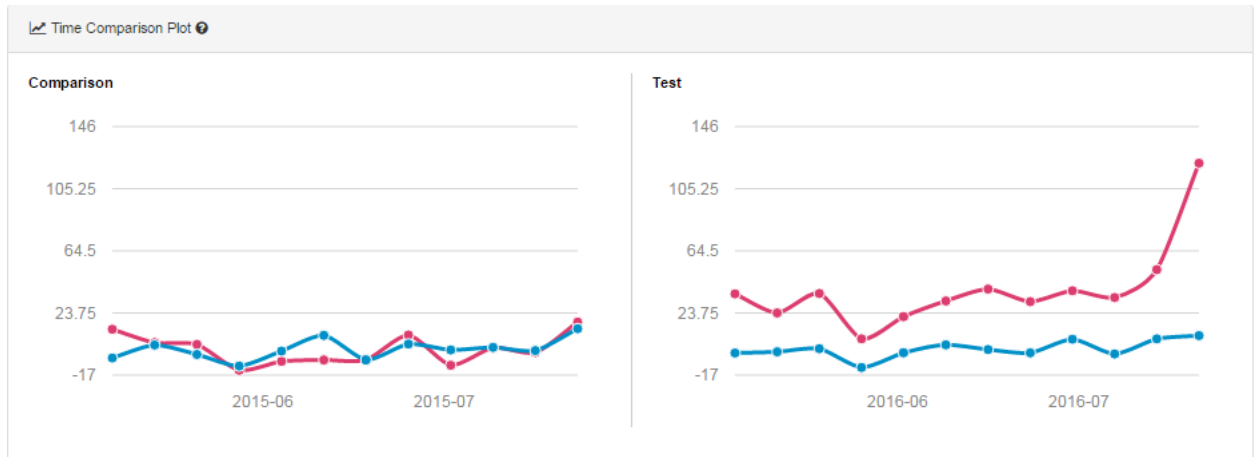
1. What is the lift from the new menu for West and Central regions (include statistical significance)?

Statistics	West	Central
Average Lift%	37.9	43.5
Expected Impact	526.5	835.9
Significance Level %	99.5	99.6

The stats show that there's positive lift and expected impact with the treatment stores compared to control stores.

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

Overall lift is 40.7%



This charts shows the comparison period (left) before implementing the menu/tv and the results during the test period (right). As you can see the test period treatment stores is a lot higher than the control stores.

Based on my analysis I recommend Round Roasters to roll out their updated menu and television ad campaign to all stores.