Project: Analyzing a Market Test

Step 1: Plan Your Analysis

The performance metric is gross_margin.
The test period goes from 2016-April-29 to 2016-July-21 *and the data should be aggregated weekly.*

Step 3: Match Treatment and Control Units

The control variables that should be considered for this analysis are: Gross margin, square feet and Month Sales.
I will use Month Sales along with Trend and Seasonality and I won't use Sq_ft because of the negative correlation with the performance metric.

	Sum_Gross.Margin	Sq_Ft	AvgMonthSales
Sum_Gross.Margin	1.000000	-0.073361	0.987815
Sq_Ft	-0.073361	1.000000	-0.098990
AvgMonthSales	0.987815	-0.098990	1.000000

The variables used to match treatment and control stores are Square feet and Gross margin

Treatment Store	Control Store 1	Control Store 2
1664	2214	1857
1675	2114	7700
1696	7434	1964
1700	1508	2014
1712	8212	6992
2288	2568	12536
2293	11568	10618
2301	10018	3002
2322	10468	11318
2341	8817	12286

Step 4: Analysis and Writeup

The company should roll out the updated menu to all stores because the overall lift is of 40.7%.
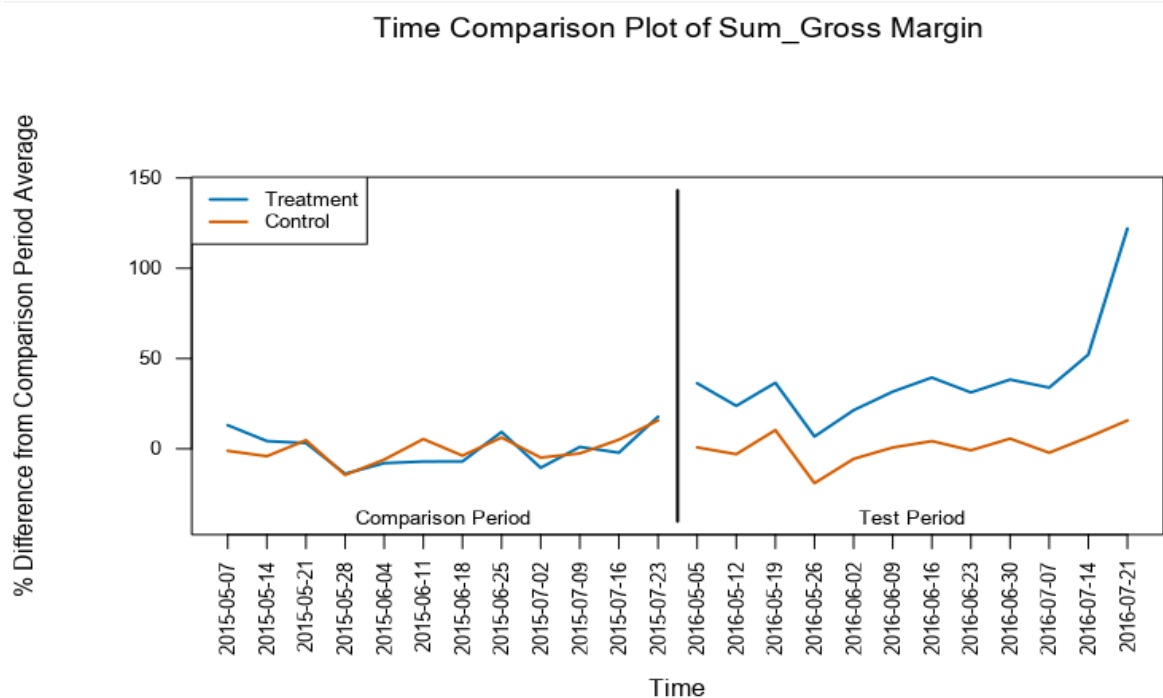
The lift from the new menu for Central regions is :

Lift	Expected Impact	Significance Level
43.5%	604	99.7%

Lift	Expected Impact	Significance Level
34.5%	647	99.1%

The lift from the new menu overall is of 40.7% with a significance level of 100%

Time Comparison Plot of Sum_Gross Margin

The Treatment units performed better than the control units during the test period, this proves that the company should roll out the new menu to every shop.

Dot Plot of the Percentage Change in Sum_Gross Margin Between the Test Period and the Same Period Last Year