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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

To perform the correct analysis, you will need to prepare a data set. (250 word limit)

Answer the following questions to help you plan out your analysis:

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

Answer:

The performance metric will be gross margin

2. What is the test period?

Answer:

The test period is between 2016-04-29 to 2016-07-21

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

Answer:

The data should be aggregated at the level of week.

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.

Answer:

- In order to match the components to the store_ID; round-roaster-transactions and round-roasters stores are joined together.
- Filtering records with an expression:-
[Invoice Date] >= "2015-01-21"
AND
[Invoice Date] <= "2016-07-21"
- Below shows the data on weekly store with the store_ID and number of count invoice displaying 10,505 records.

Results - Output Data (65) - Input					
7 of 7 Fields		Cell Viewer		10,505 records displayed	
Record #	StoreID	Week	Week_Start	Week_End	Count_Invoice
1	1508	1	2015-01-21	2015-01-27	361
2	1508	2	2015-01-28	2015-02-03	346
3	1508	3	2015-02-04	2015-02-10	403
4	1508	4	2015-02-11	2015-02-17	372
5	1508	5	2015-02-18	2015-02-24	392
6	1508	6	2015-02-25	2015-03-03	361
7	1508	7	2015-03-04	2015-03-10	447
8	1508	8	2015-03-11	2015-03-17	375
9	1508	9	2015-03-18	2015-03-24	234
10	1508	10	2015-03-25	2015-03-31	409
11	1508	11	2015-04-01	2015-04-07	422
12	1508	12	2015-04-08	2015-04-14	296
13	1508	13	2015-04-15	2015-04-21	358
14	1508	14	2015-04-22	2015-04-28	433
15	1508	15	2015-04-29	2015-05-05	389
16	1508	16	2015-05-06	2015-05-12	424
17	1508	17	2015-05-13	2015-05-19	453
18	1508	18	2015-05-20	2015-05-26	335
19	1508	19	2015-05-27	2015-06-02	324
20	1508	20	2015-06-03	2015-06-09	401
21	1508	21	2015-06-10	2015-06-16	362
22	1508	22	2015-06-17	2015-06-23	426
23	1508	23	2015-06-24	2015-06-30	315
24	1508	24	2015-07-01	2015-07-07	295
25	1508	25	2015-07-08	2015-07-14	345
26	1508	26	2015-07-15	2015-07-21	482

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.

Answer:

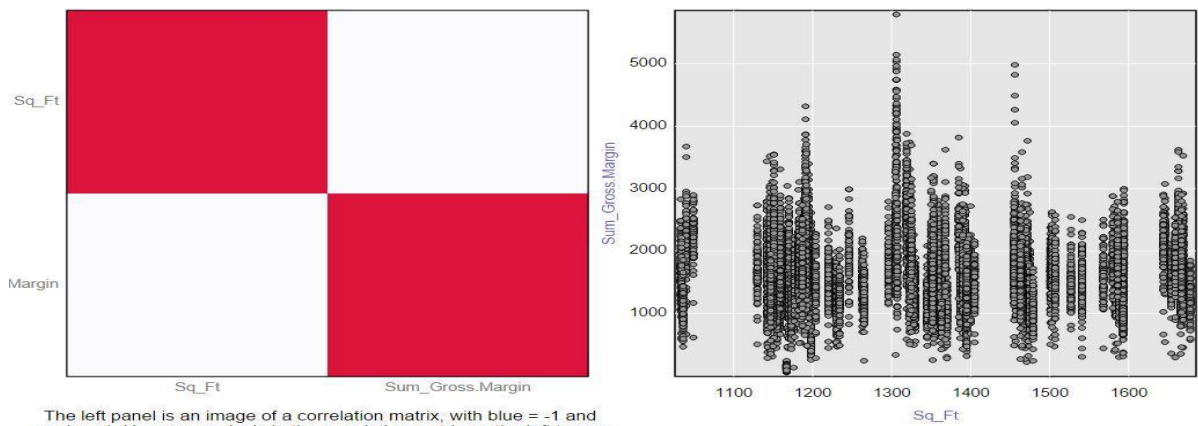
The control variables to be consider are the Sq_Ft and AvgMonthlySales.

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

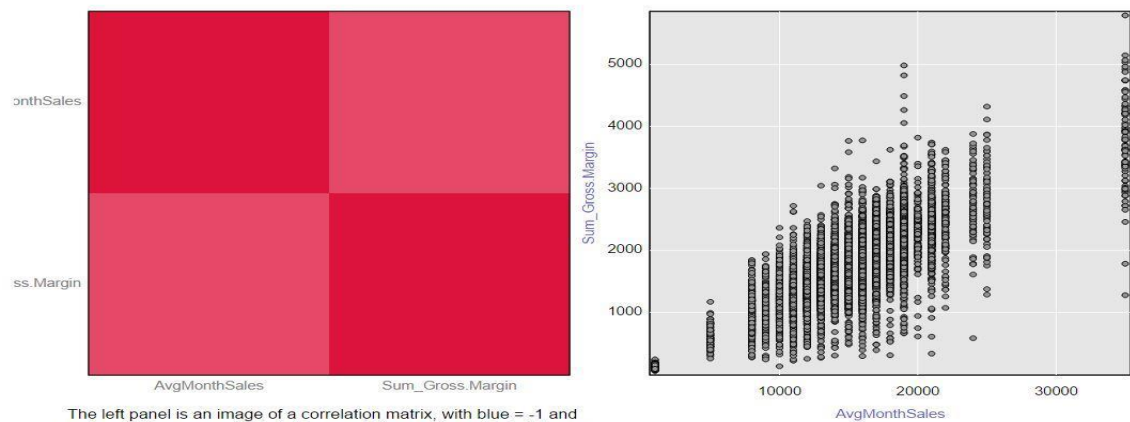
Answer:

Below are the visualizations of the correlation matrices, where the AvgMonthlySales can be seen as highly correlated to my performance metric: Sum_Gross Margin. Therefore it can be asserts that if and only if, two stores have the same AvgMonthlySales then they are going to have an equivalent sum_gross_margins that will result in matching the stores.

AvgMonthlySales vs Sq_Ft



AvgMonthlySales vs. Sum_Gross Margin



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

Answer:

The control variables of the Trend, seasonality and Sq_Ft will be use to match treatment and control stores.

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

Answer:

6 of 6 Fields | Cell Viewer | 20 records displayed, 2358 bytes

Record #	StoreID	Controls	Treatments	Distance	Region	Treatment
1	1664	1964	1664	0.034898	Central	Treatment
2	1664	6992	1664	0.311856	Central	Treatment
3	1675	2014	1675	0.338873	Central	Treatment
4	1675	8312	1675	0.362477	Central	Treatment
5	1696	7334	1696	0.564902	Central	Treatment
6	1696	8112	1696	0.707449	Central	Treatment
7	1700	7037	1700	0.739116	Central	Treatment
8	1700	7384	1700	0.80996	Central	Treatment
9	1712	8212	1712	0.153046	Central	Treatment
10	1712	1857	1712	0.20417	Central	Treatment
11	2288	10218	2288	0.280109	West	Treatment
12	2288	10568	2288	0.32542	West	Treatment
13	2293	3302	2293	0.390416	West	Treatment
14	2293	11768	2293	0.463527	West	Treatment
15	2301	3185	2301	0.12654	West	Treatment
16	2301	10468	2301	0.223266	West	Treatment
17	2322	9017	2322	0.082676	West	Treatment
18	2322	8817	2322	0.235906	West	Treatment
19	2341	2409	2341	0.064332	West	Treatment
20	2341	2572	2341	0.145228	West	Treatment

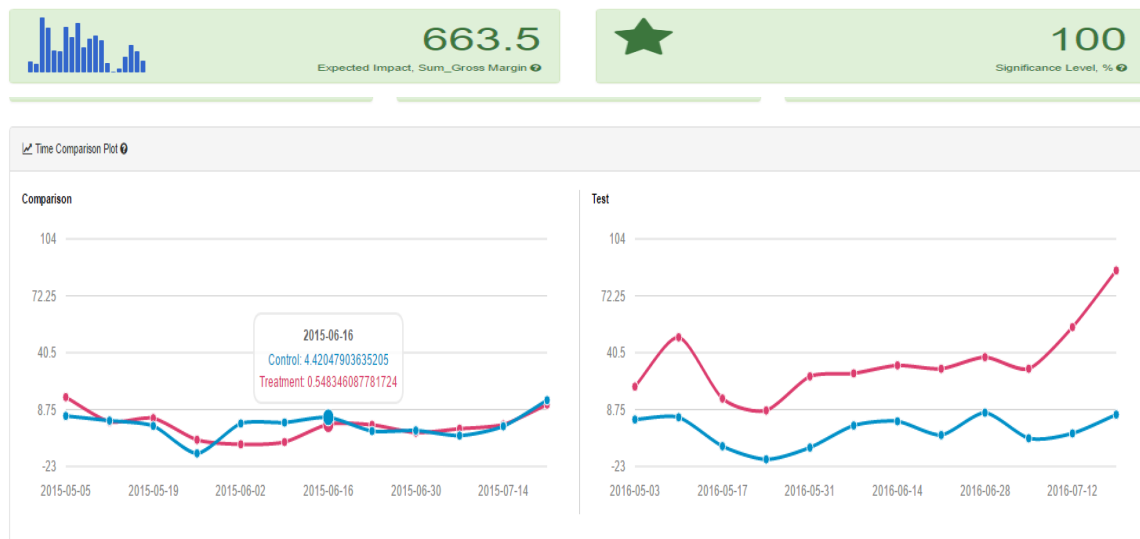
Step 4: Analysis and Writeup

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?

Answer:



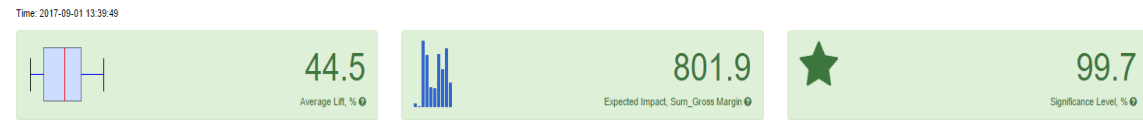
According to the visualization above, I think the company should roll out the updated menu

to all stores since there is an increased in sales.

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

Answer:

Lift from the new menu for Central region

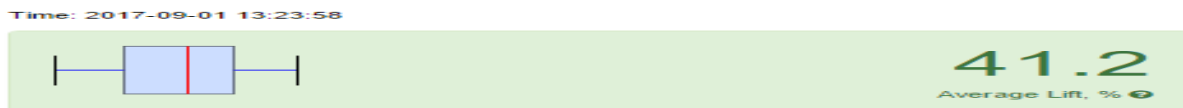


Lift from the new menu for West region



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

Answer:



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.