# 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?

ANS. Our task is to analyze the A/B test and recommend whether the Round Roasters chain should launch this new menu. Our performance metric will be "Gross Margin". The predicted impact to profitability (Gross Margin) should be enough to justify the increased marketing budget: at least 18% increase in Gross Margin compared to the Control Stores.

2. What is the test period?

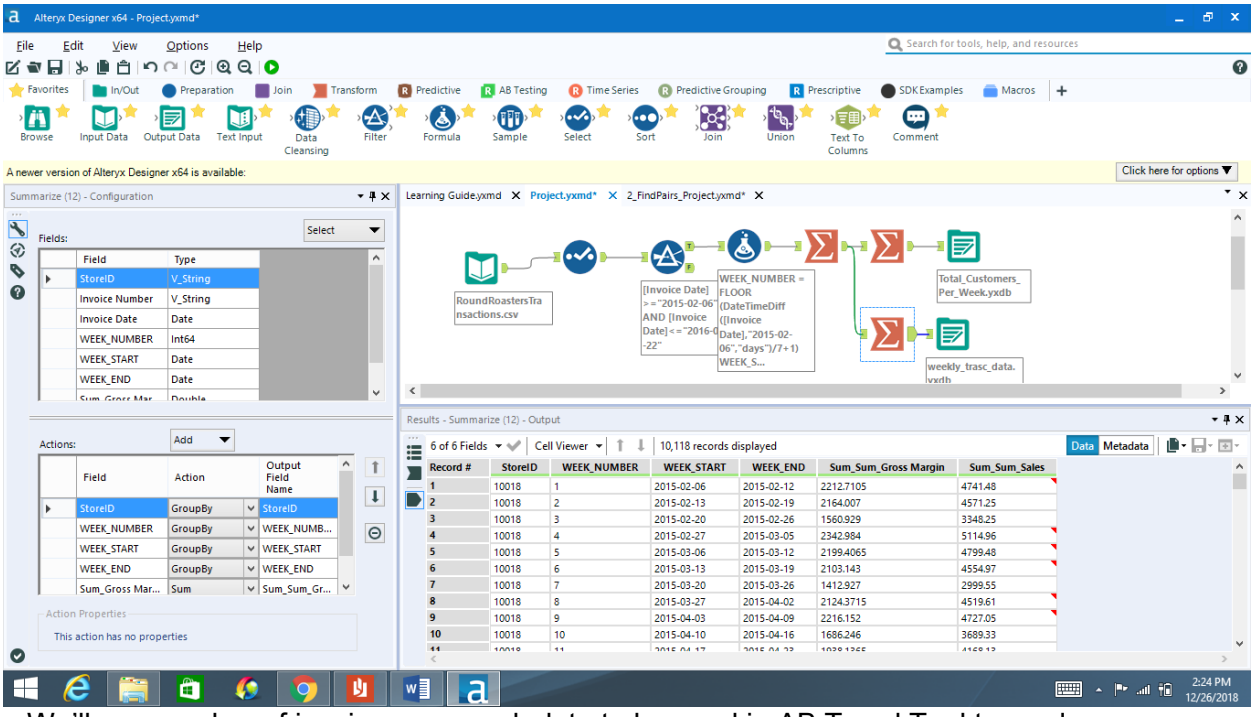
ANS. The test ran for a period of 12 weeks i.e. 2016-April-29 to 2016-July-21 where five stores in each of the test markets (Denver and Chicago) offered the updated menu along with television advertising.

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

ANS. The data should be aggregated at weekly level to get more precise and accurate data for prediction.

## Step 2: Clean Up Your Data

*Weekly Transaction Data For All Stores:-*




We'll use number of invoices per week data to be used in AB Trend Tool to produce our

Seasonality and Trend indices to help us match our treatment and control stores.

# Step 3: Match Treatment and Control Units

*Apart from trend and seasonality...*

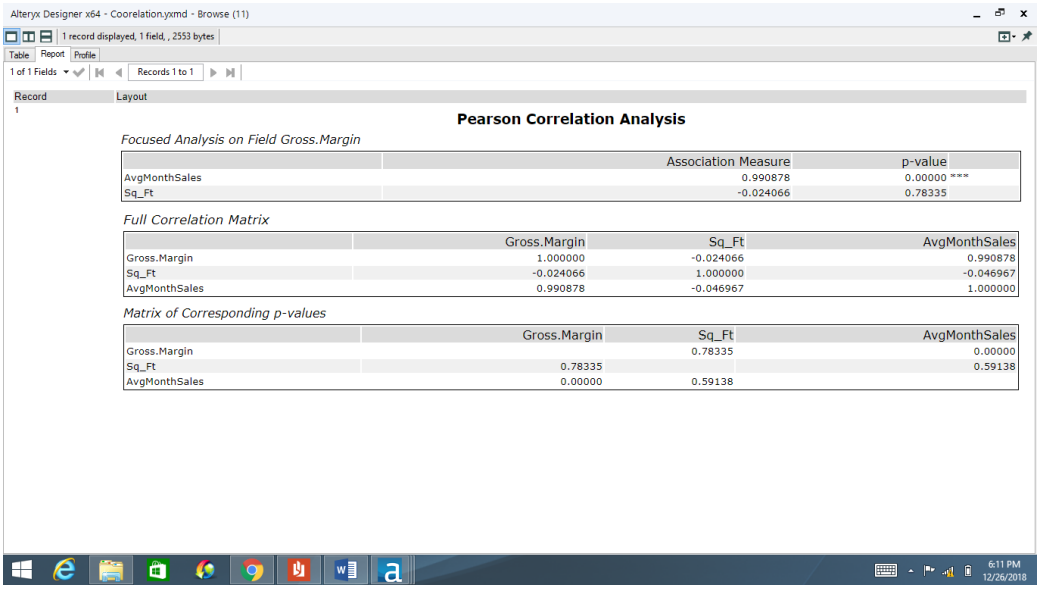
1. What control variables should be considered? Note: Only consider variables in the RoundRoastersStore file.

ANS. I considered square feet (sq.ft), Average Monthly Sales, and region as the control variables.

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

Ans The correlation between square feet and gross margin is not good i.e.-0.02 Therefore, square feet cannot be considered as a control variable. The correlation between average monthly sales and gross margin is very good i.e. 0.99 Therefore, average monthly sales is one of our control variables. Region and gross margin are also highly correlated as seen in the Plot of Means Analysis Tool Therefore, Region is also one of our Control Variable.

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

Ans. 


According to the above answer and above image apart from data i.e. number of invoices per week used in AB Trend Tool to calculate trends and seasonality, the control variables used are Region and Average Monthly Sales.

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

Ans. We matched each treatment unit to two control units per region.

| Treatment Store | Control Store 1 | Control Store 2 |
|---|---|---|
| 1664 | 7162 | 8112 |
| 1675 | 1580 | 1807 |
| 1696 | 1964 | 1863 |

| | | |
|---|---|---|
| 1700 | 2014 | 1630 |
| 2288 | 9081 | 2568 |
| 2293 | 12219 | 9524 |
| 2301 | 3012 | 9238 |
| 2322 | 2409 | 3235 |
| 2341 | 12536 | 2383 |
| 1712 | 8162 | 7434 |

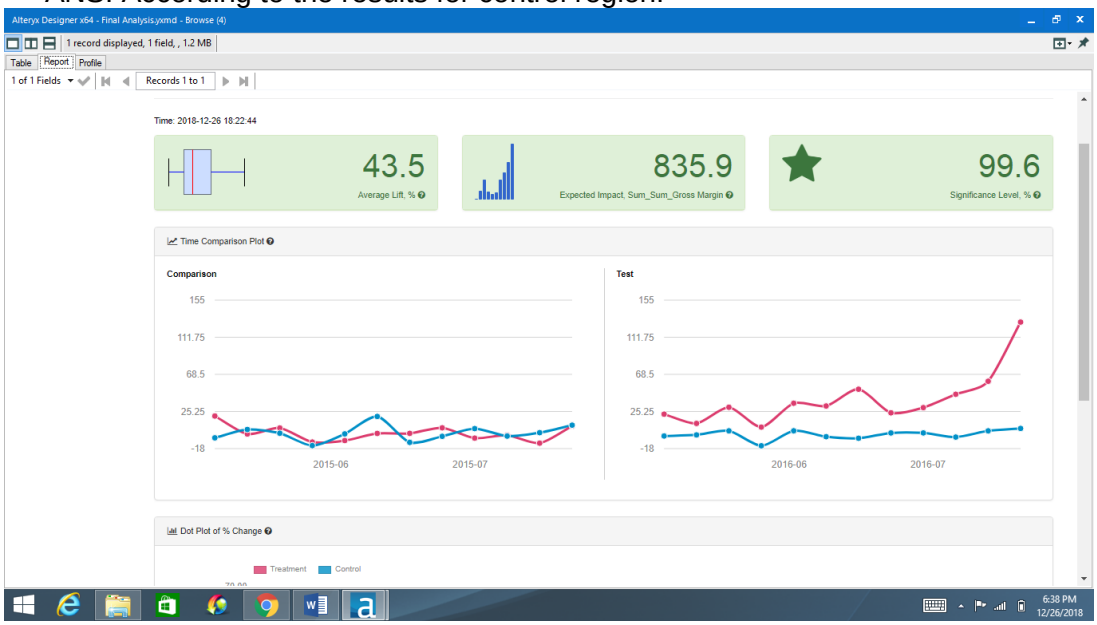
# Step 4: Analysis and Write up

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

Ans. Yes, the company should roll out the updated menu to all the stores because the results predicted from the AB analysis is that the new menu can drive enough sales to offset the cost of marketing the new menu.

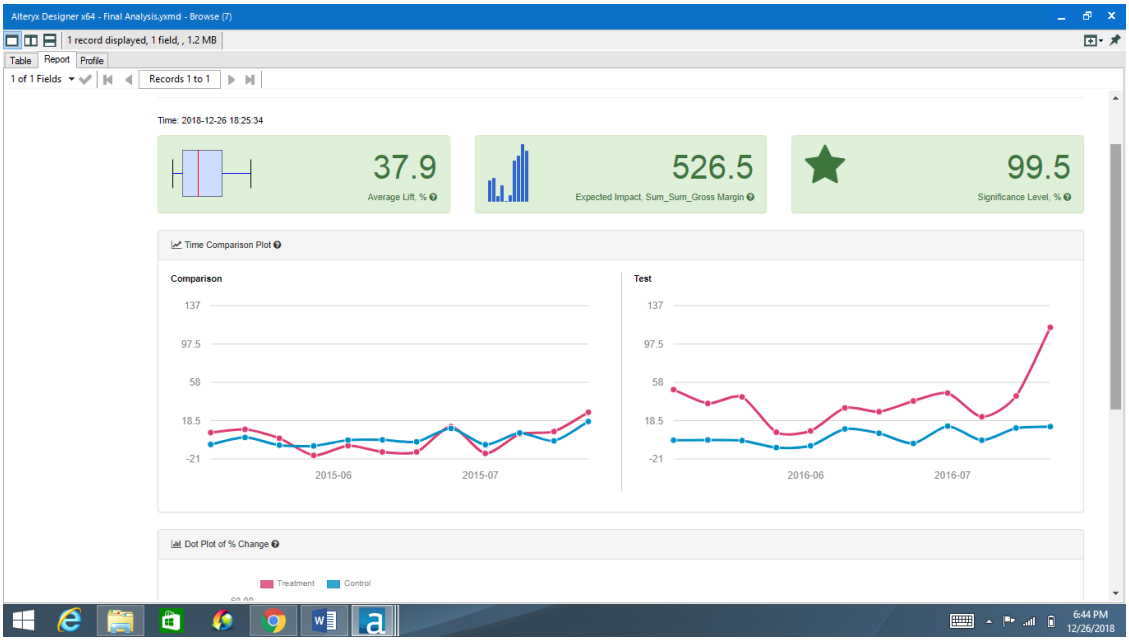
2. What is the lift from the new menu for West and Central regions (include statistical significance)?

ANS. According to the results for control region:




The report shows that the launch of new menu in the Central Region showed 43.5% improvement at a significance of 99.6% over the control stores with the old menu.

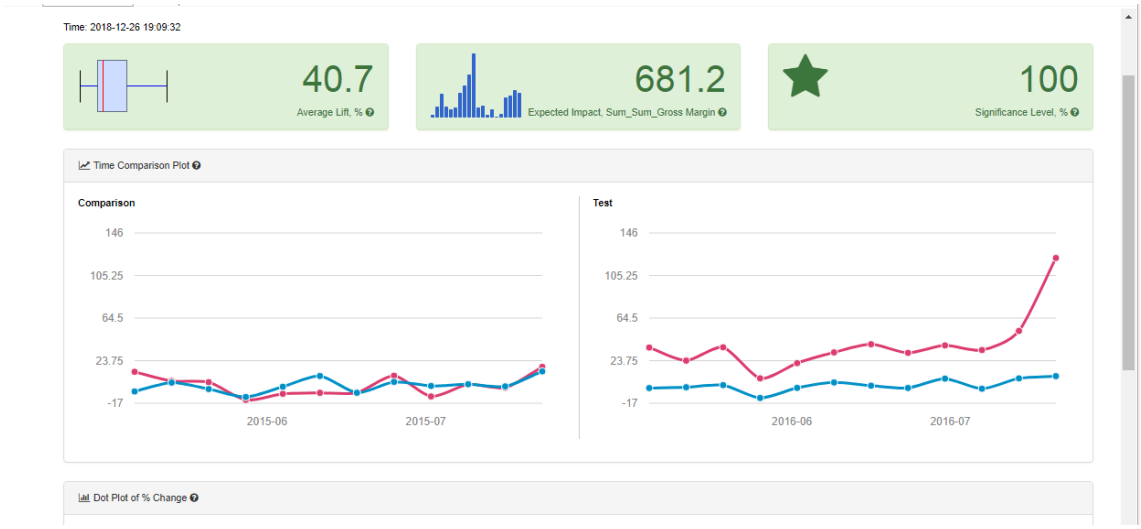
According to the results from West Region:




The report shows that the launch of new menu in the West Region showed 37.9% improvement at a significance of 99.5% over the control stores with the old menu.

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

ANS. 40.7%

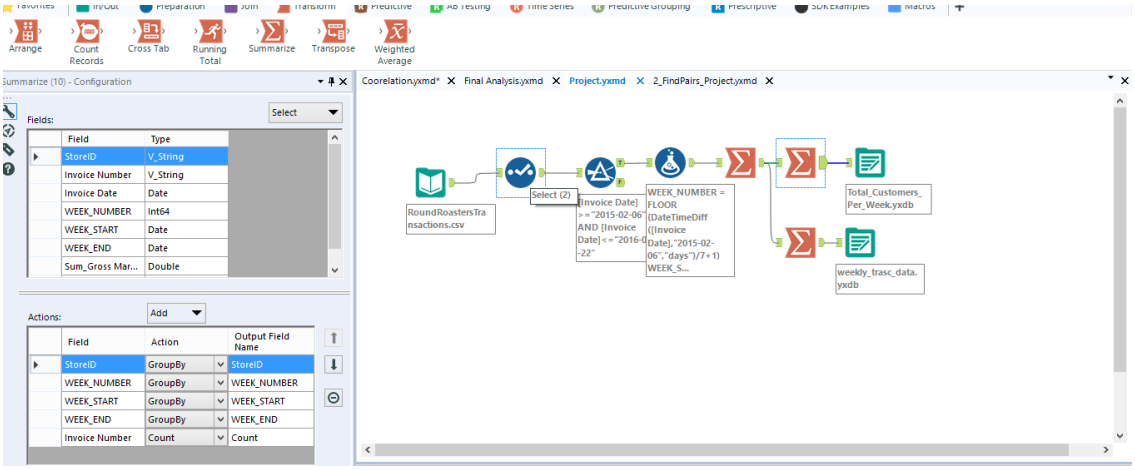


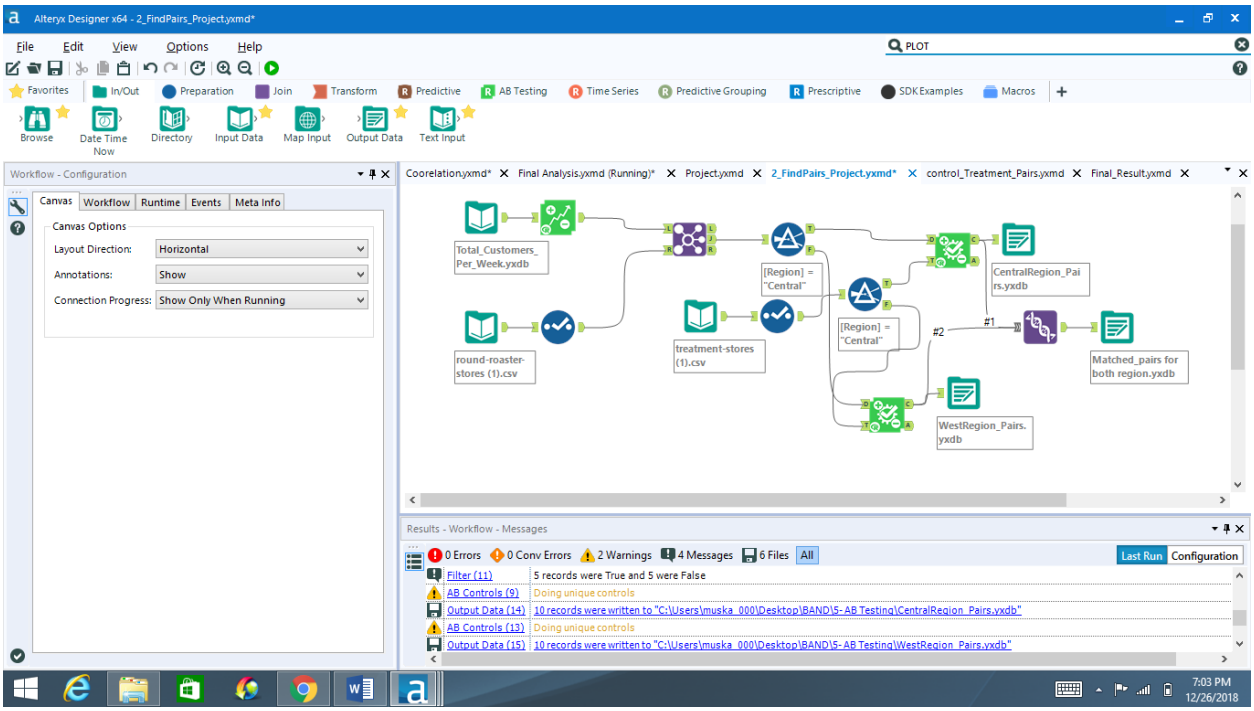

My workflow:

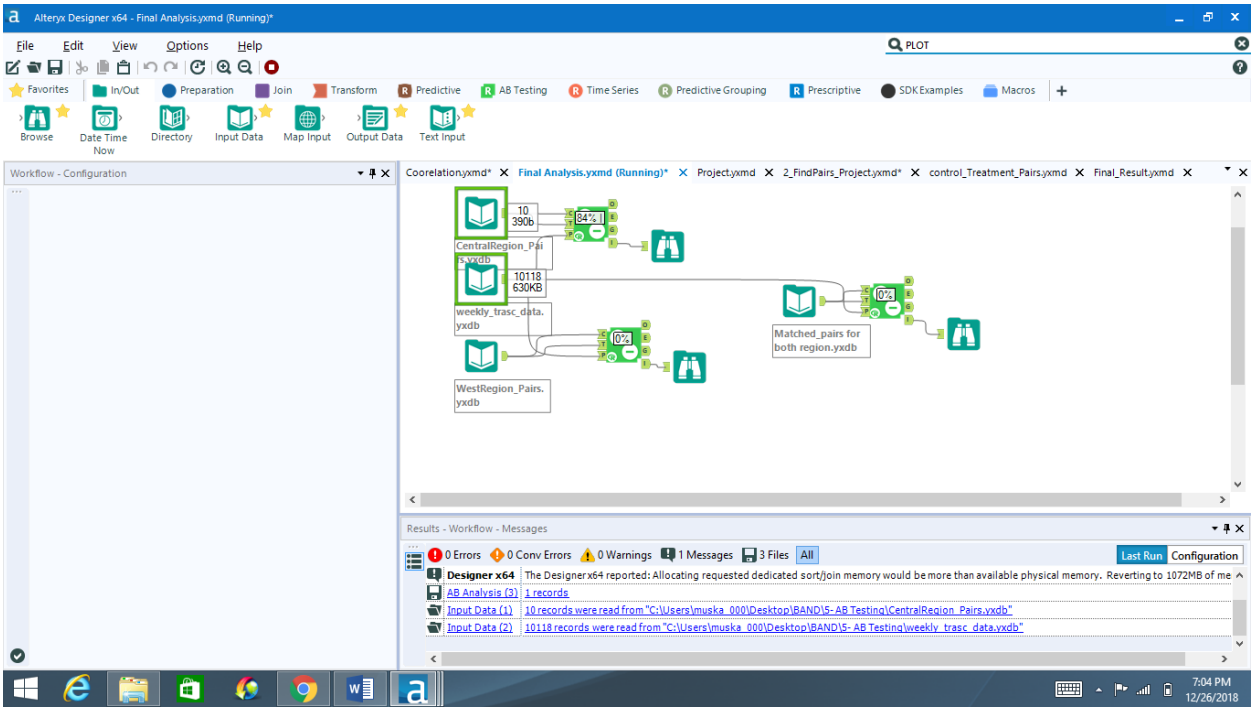
1). I summarized the data from RoundRoatersTransactions.csv to calculate “Number of Invoices Per week” for calculating Trends and Seasonality from AB Trend Tool:

2). In my second Workflow, I calculated Trends and Seasonality from data ‘Number Of Invoices Per Week” by AB Trend Tools. And used it to match 2 control units to each Treatment unit along with control Variable ‘Average Monthly Sales’ per region.

3). In my Third Workflow I used Transaction data per week per store and data matched control pairs for each region for AB Analysis .




Alteryx Designer x64 - Final Analysis.yxmd (Running)*
File
Edit
View
Options
Help
PLOT
Favorites
In/Out
Preparation
Join
Transform
Predictive
AB Testing
Time Series
Predictive Grouping
Prescriptive
SDK Examples
Macros
Browse
Date Time Now
Directory
Input Data
Map Input
Output Data
Text Input
Workflow - Configuration
Coorelation.yxmd*
Final Analysis.yxmd (Running)*
Project.yxmd
2_FindPairs_Project.yxmd*
control_Treatment_Pairs.yxmd
Final_Result.yxmd
10
390b
84%
CentralRegion_Pairs.yxdb
10118
630KB
weekly_trasc_data.yxdb
0%
WestRegion_Pairs.yxdb
0%
Matched_pairs for both region.yxdb
Results - Workflow - Messages
0 Errors
0 Conv Errors
0 Warnings
1 Messages
3 Files
All
Last Run
Configuration
Designer x64
The Designer x64 reported: Allocating requested dedicated sort/join memory would be more than available physical memory. Reverting to 1072MB of me
AB Analysis (3)
1 records
Input Data (1)
10 records were read from "C:\Users\muska_000\Desktop\BAND\5- AB Testing\CentralRegion_Pairs.yxdb"
Input Data (2)
10118 records were read from "C:\Users\muska_000\Desktop\BAND\5- AB Testing\weekly_trasc_data.yxdb"
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