

Front & Back Page Insights Analysis for Weekly Flyer Using SAS Enterprise Guide

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SAS in the Retail Space

- ▶ Big Data: The Retail space has big data with all the transactions being recorded at each store for a retailer in a database.
- ▶ Promotions and the triggers for each promotion are also recorded in the database.
- ▶ Proper data quality measures and removal of outliers is essential before using the raw data
- ▶ Determination of appropriate KPIs to track promotions and flyer analysis.

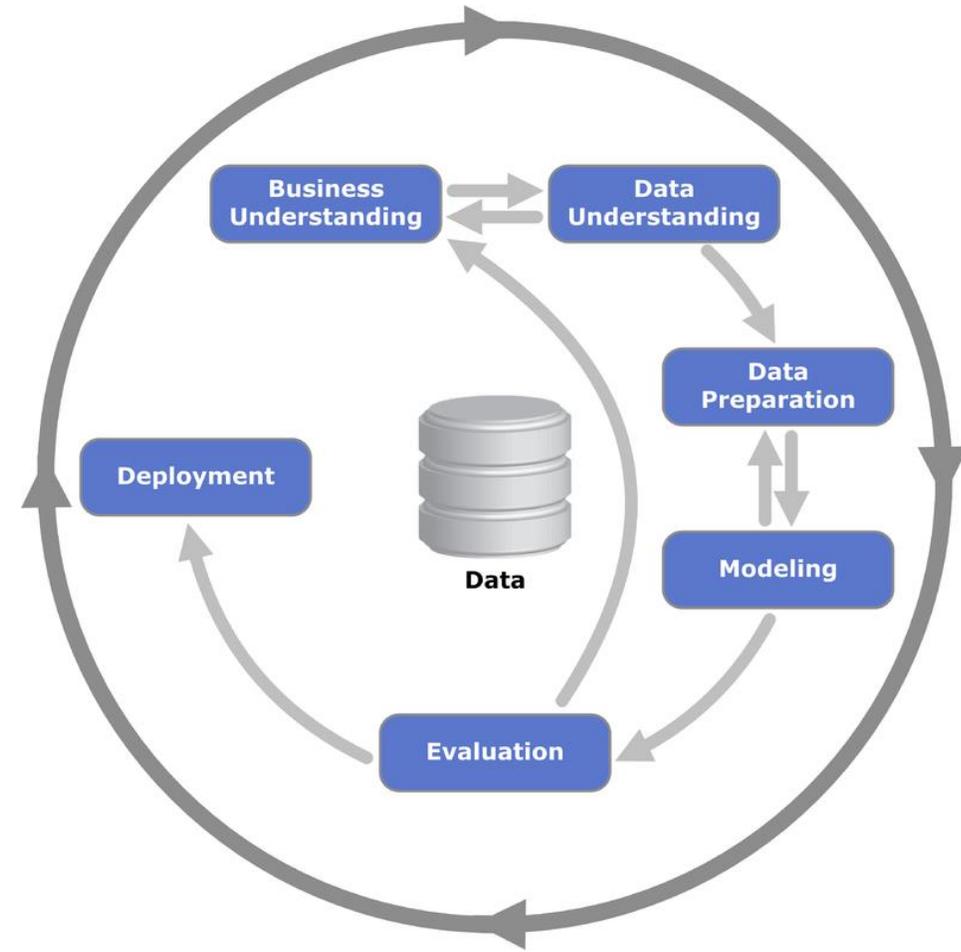
SAS in the Retail Space: Flyer Scorecard

- ▶ KPI Analysis for Weekly Flyer (Front/Back Page)with SAS EG:
 - ▶ Average Basket Size of Customers Purchasing Items in the Ad spots
 - ▶ Segmentation analysis using SAS Enterprise Guide by ad spot for HH and sales
 - ▶ Measuring the HH trends across the flyer by week
 - ▶ Identifying ad spots attracting the most loyal shoppers
 - ▶ Identifying ad spots attracting shoppers from competitors into our stores.
 - ▶ Profitability analysis by ad spot

CRISP-DM Methodology for Flyer Scorecard

Steps Involved:

- Iterative process between management and analytics team to identify KPIs for actionable insights.
- Modeling the data and evaluating the models.
- Checking with the business leaders and directors to evaluate the usefulness of the models
- Deploying the model
- The KPIs being measured are checked periodically to adapt to the changing needs of the business.



SAS Macro Variables for Sales and HHs by ad spot

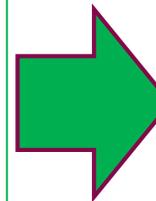
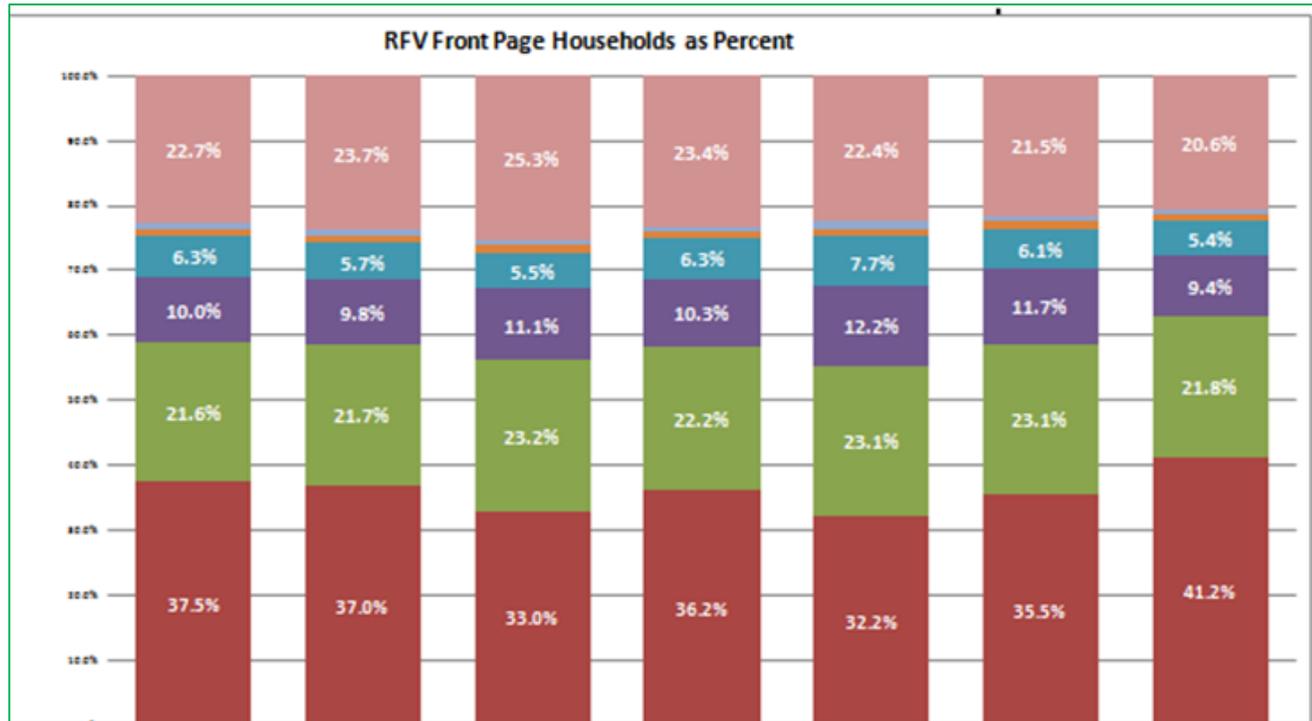
```
options symbolgen mlogic;
%LET START_DT= 19FEB2016;
%LET END_DT= 25feb2016;
%let REGION= WES;
%let region_cd=W;
%let select_dt=10APR2016;
%let BANNER = '005';
%let noadspots=5;
%let front1=188169,340841,150376,340842;
%let front2=115208,160123;
%let front3=132212;
%let front4=7950;
%let front5=72331,360816;
```

Do Macro Loop Program (by Ad Spot)

```
%macro itemsales;  
  %do i=1 %to &noadspots;  
    PROC SQL;  
      CREATE TABLE WORK.UNIQUETran6 AS  
      SELECT
```

```
proc print data=UNIQUECC6 noobs;  
title 'Basket Sizes for Adspot : ' &i ' : ' &&front&i;  
run;  
%end;  
%mend itemsales;  
%itemsales;
```

Identifying Ad Spots by Segment *



To measure which ad spots seem by segment:

Used to identify which ad spots are attracting the most loyal shoppers and shoppers from competitors' stores.

To track how the customer segments are responding to the promotions on flyer front/back page.

* All figures are illustrative in nature to maintain confidentiality and are for representative purposes only.

Indices to Capture Flyer Performance*

To measure which ad spots seem to be attracting more HHs to the stores by segment:

- Indices > 1 show more HHs are buying from the flyer compared to the all store HHs
- Indices < 1 show less HHs are buying from the flyer compared to the all store HHs.



HH Index (Flyer to All Store)	FP Ad spot 1	FP Ad spot 2	FP Ad spot 3	FP Ad spot 4	FP Ad spot 5	FP Ad spot 6	FP Ad spot 7	FP Ad spot 8	FP Ad spot 9	FP Ad spot 10		ALL FP ITEMS (UNIQUE HH)
Segment 1	1.95	1.70	1.58	1.46	1.78	1.66	1.70	1.82	1.53	1.36		1.37
Segment 2	1.03	1.07	1.04	1.07	1.06	1.09	1.07	1.11	1.10	1.06		1.07
Segment 3	0.63	0.74	0.77	0.83	0.69	0.75	0.75	0.63	0.81	0.94		0.90
Segment 4	0.43	0.54	0.65	0.69	0.53	0.55	0.54	0.49	0.64	0.75		0.73
Segment 5	0.57	0.62	0.68	0.72	0.55	0.66	0.55	0.59	0.63	0.61		0.69
Segment 6	0.46	0.54	0.64	0.63	0.51	0.55	0.55	0.53	0.54	0.55		0.63

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Some Challenges and Opportunities for the Flyer Scorecard

Challenges:

- ▶ Clean up historical data for ads to create a history and a history of ad spots to build forecasts.
- ▶ Data repositories may exist in unstructured data sources; considerable data cleansing and merging of datasets required to create a unified database for weekly flyer performance.

Opportunities:

- ▶ Build a data repository for ad spots for the flyer based on actual sales and HHs to predict the sales and HHs for future flyers.
- ▶ Predictive modeling for sales and HHs for the segmentations exist: With sufficient history, the predictive power of the model improves.