



# Scanner Data Analysis- All Purpose Cleaners

GROUP 8

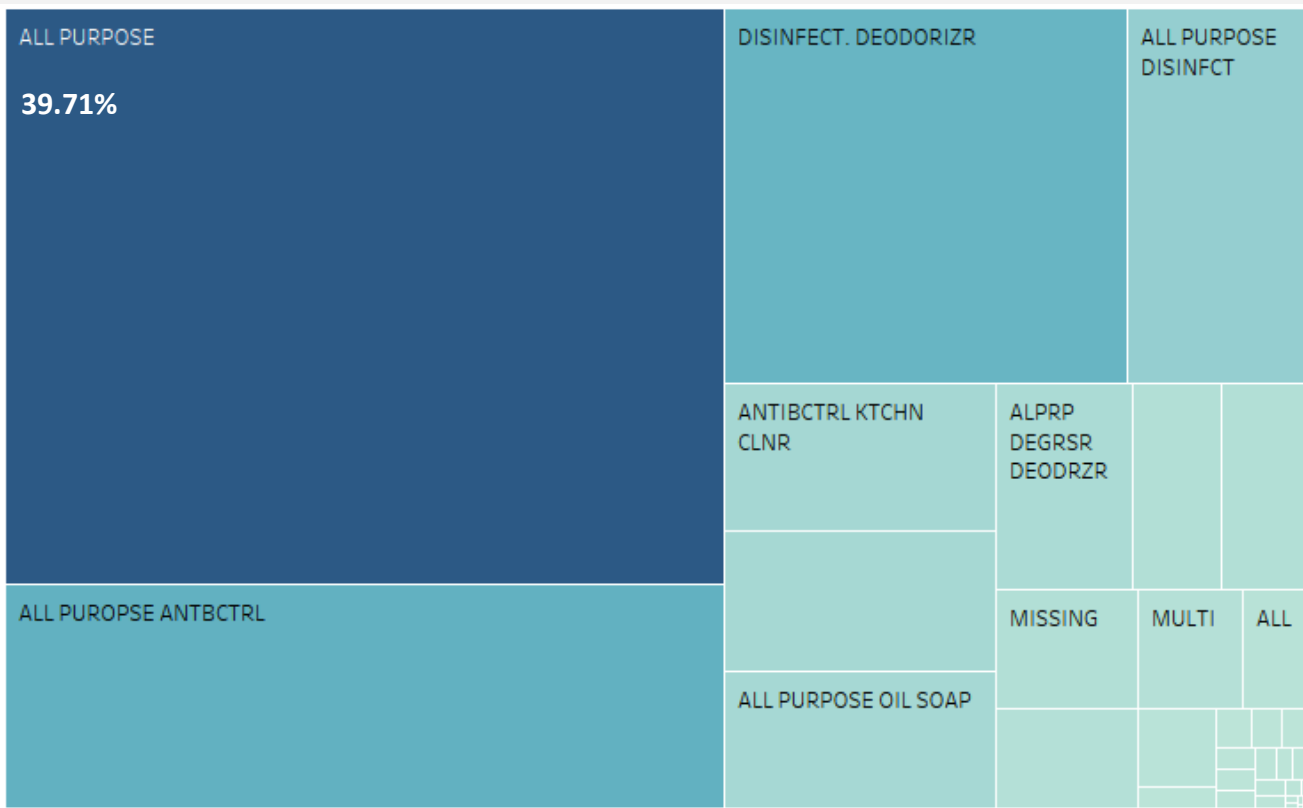
## OVERVIEW

The data obtained was a grocery and drug store scanner data of household cleaners along with customer and store demographics. Analysis was done by role playing a Brand Manager to help accelerate the growth of the brand to increase market share. We performed a competitive analysis amongst top performing household cleaners to bring business values and to provide insights.

Analyzing current market scenario and apply statistical models to identify significant attributes contributing towards increase in sales. As quoted by Arthur C.Nielsen, “The price of light is better than the cost of darkness”, hence performing analysis of data in today’s world is of the utmost importance. We accomplished this by deciding on multiple hypothesis, then understanding data and analyzing it at brand level, segmenting customers and providing recommendations, insights from our key findings.

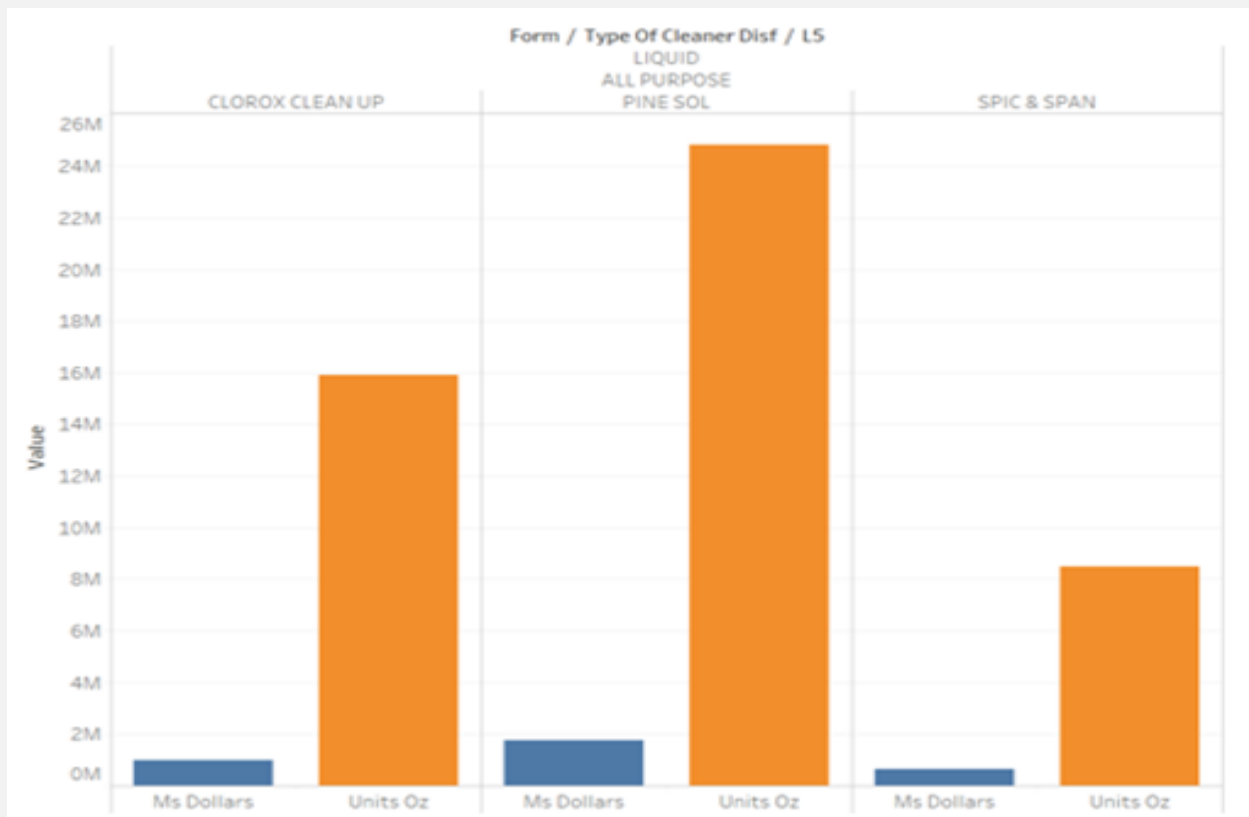
## DESCRIPTIVE STATISTICS

We performed various descriptive analysis on our datasets and observed the following results:



**Fig1: Types of Cleaners**

Household Cleaners market consists of various types of cleaner and disinfectants such as All Purpose, Bathroom and Kitchen, All Surface. The most prominent type of cleaner category being All Purpose. As the above visualization indicates that All-purpose cleaner category dominates the market we decided to analyze this type of cleaner market to ascertain the top performing brands.



**Fig2: Graph displays top 3 types of cleaners in the market according to volume**

The All Purpose Cleaner segment is scattered with the top 2 brands contributing to ~ 50% of market share -Pine sol and Clorox Clean Up. Pine Sol is the market leader with 32.4% market share and Clorox is the second most popular with 17.9%. On further analysis we observed that the price per ounce for Clorox was very high when compared to Pine Sol which justified the high-volume sales of Pine Sol.

The data was preprocessed by weighting price by ounce, volume per ounce and taking weights for display and features to standardize the results across all cleaner category and brands.

### OWN AND CROSS PRICE ELASTICITY

To analyze the effect on revenue and sales of Pine Sol by measuring its own price elasticity and cross price elasticity with Clorox Clean Up.

Parameter Estimates						
Variable	DF	Estimate	Standard Error	t Value	Pr >  t	Label
Intercept	1	-1.81592	0.2823	-6.43	<.0001	Intercept
PRICE_PER_OZ_WT_LOG	1	0.579446	0.0767	7.55	<.0001	
F_APLUS_WT	1	-0.66488	0.1025	-6.49	<.0001	
PRICE_PER_OZ_WT_LOG_PINESOL	1	-3.2986	0.0489	-67.50	<.0001	
D_MINOR_WT_PINESOL	1	0.855407	0.0446	19.19	<.0001	
D_MAJOR_WT_PINESOL	1	1.005784	0.0351	28.68	<.0001	
F_APLUS_WT_PINESOL	1	0.847149	0.0869	9.75	<.0001	
F_A_WT_PINESOL	1	0.271987	0.0336	8.09	<.0001	
F_B_WT_PINESOL	1	0.335137	0.0283	11.86	<.0001	
F_C_WT_PINESOL	1	0.548359	0.0742	7.39	<.0001	

**Fig3: Log- Log model to measure price elasticity of Pine Sol**

We ran a log-log model to estimate price elasticity of PINESOL(own) and CLOROX(cross) against market share of PINESOL units sold.

The feature program of Clorox has a considerable negative impact on Sales of PINESOL. For every 1 unit increase of Feature A+ of CLOROX(Coupon or rebate), the sales of PINESOL would reduce by 0.66%.

The coefficient of price elasticity of PINESOL is -3.29 which means that increasing the price by 1% would reduce the sales by 3.29%.

Minor and Major display would increase sales by 0.85% and 1% respectively. Another interesting observation was sales increased with decrease in size of the ads. The estimate is that sales would increase by 0.27, 0.33 and 0.55 percent for large, medium and small size ads respectively. Running a FA+ feature for PINESOL would increase sales by approximately 0.85%.

## MARKET PERFORMANCE

By understanding the stores performance in the market, we can develop marketing, promotion strategies to increase product sales, retain existing customer base and attract potential new customers.

Below are the total sales of CLOROX and PINESOL across markets respectively



**Fig4: Total sales of Clorox Clean Up by market**

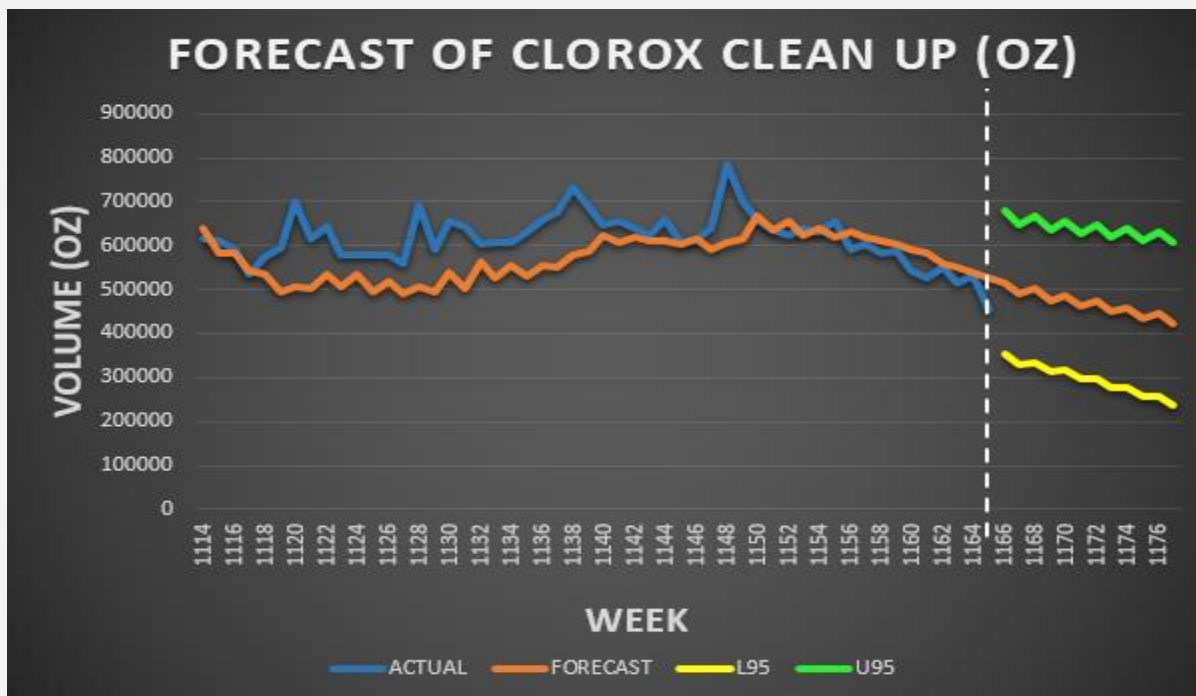
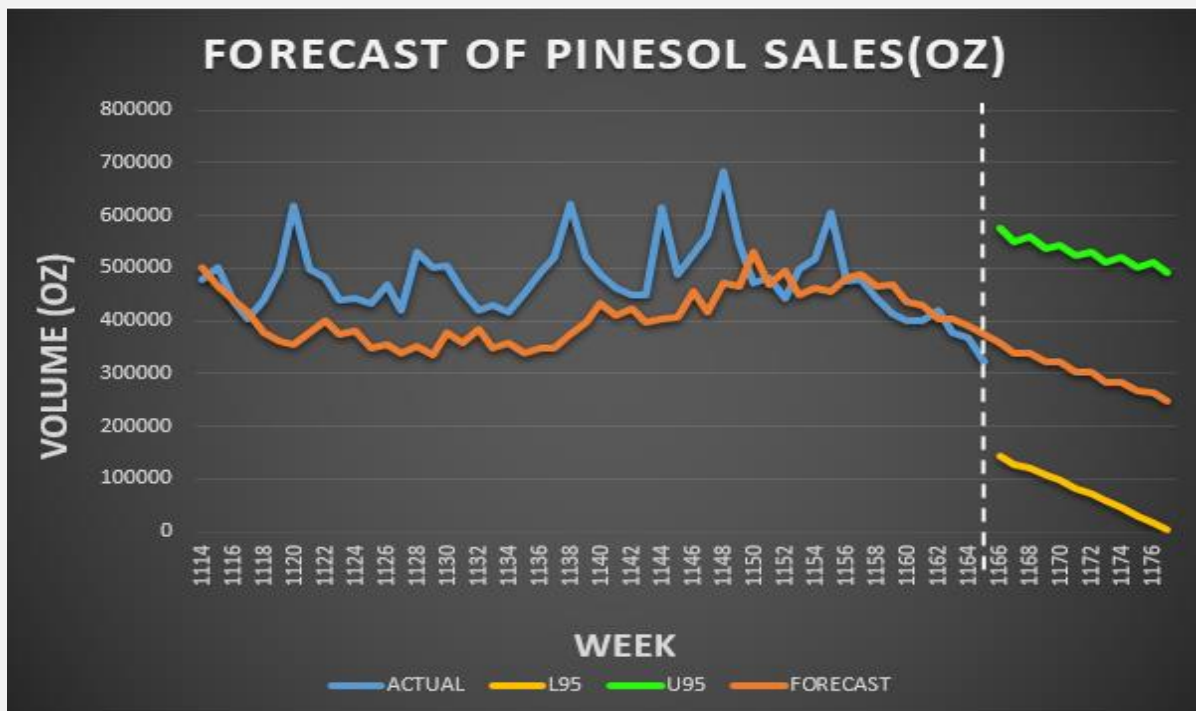


**Fig5: Total sales of Pine Sol by market**

Although PineSol sells more volume throughout the country, Clorox is able to sell 12.5 million-unit ounces against Pinesol's 7.5 in New York. We saw in our demographic analysis is that Pine Sol is preferred by medium income families in the range of 30,000 – 50,000 and by old people above the age of 65.

Philadelphia does not even feature in the top 10 for Pine Sol and should consider focusing its efforts on improving that market. It can produce different variants with better quality and with additional features such as scent to tap that market. It can also have slightly higher prices for those variants and change its image of an inexpensive brand.

## TREND AND FORECAST



Based on the Grocery Scanner Data, we see that the data is stationary and not following a trend or seasonality. We observe that there is a decline in sales from the week 1156 for Pine Sol and 1150 for Clorox.

The panel data did not have any panelists for New York for the respective brand. New York is the biggest market for both brands. Hence, we are speculating that the sales fell after the 9/11 terrorist attacks which coincides with week 1150. Also, various reports from Clorox Company indicated a decline of sales in Q4 of 2001 and Q1 of 2002 which is the parent company of Clorox Clean Up and Pine Sol.

## RFM ANALYSIS

We performed RFM analysis on the dataset to segment our customers based on RFM scores and to identify those customers who are likely to respond to our campaigns and promotions.

The panel data for grocery stores was combined with the product data to identify the brands chosen by different panelists. We ran RFM analysis on household panel data taking Combined PreTax Income, Number of Pets (cats and Dogs), Number of Children, Family Size and Age into account. All our customers are divided into 5 clusters.

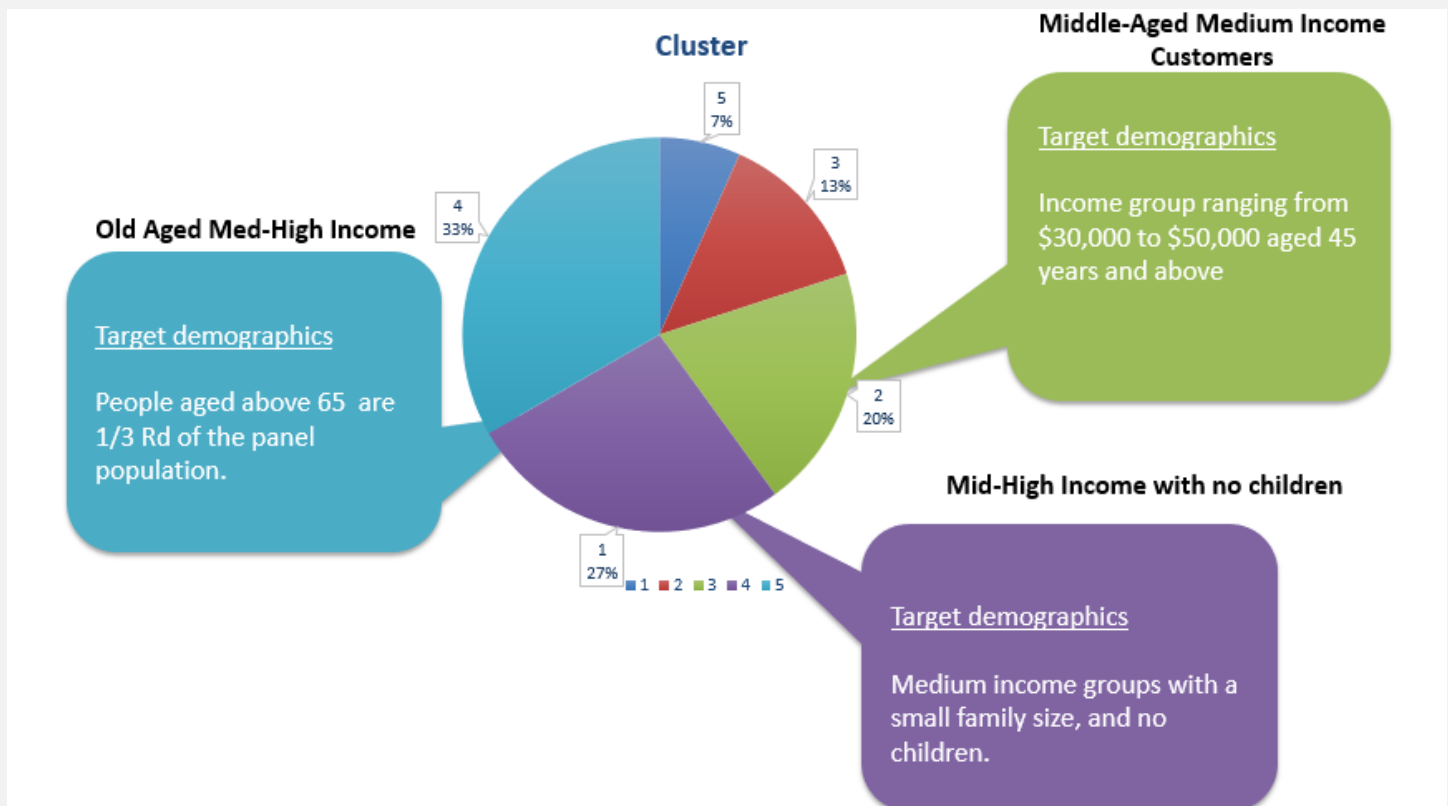


Fig6: RFM Analysis for Pine Sol

The results indicate that Pine Sol's loyal customers (33%) are aged 65 years and above with mostly no kids in the households. This is the segment which is responsive to promotions and should be rewarded to sustain market share. The next segment to focus on is the medium to high income group with no children, we can engage them by offering coupons or free samples of the product. Last category, the middle aged medium income customers brand awareness campaigns might help in activating customers.

## **RECOMMENDATIONS**

After Panel regression, RFM and demographic analysis, we recommend the following:

- Consider reducing the price of Clorox Clean Up order to make it more competitive.
- Design and execute a rewards program targeting old age people and small families whose household income is high as they emerged as loyal customers.
- Try to reach out to low performing clusters through special discounts and offer. Ignore them if they do not show an improvement in performance.
- Small sized adverts were most effective marketing strategy for Pine Sol.
- Coupons and rebates have considerable impact on sales in the case of PineSol so provide more offers to increase sales.
- Price Reduction is ineffective for PineSol.