

Social Media Marketing

Exploring Product Sales and Market Data

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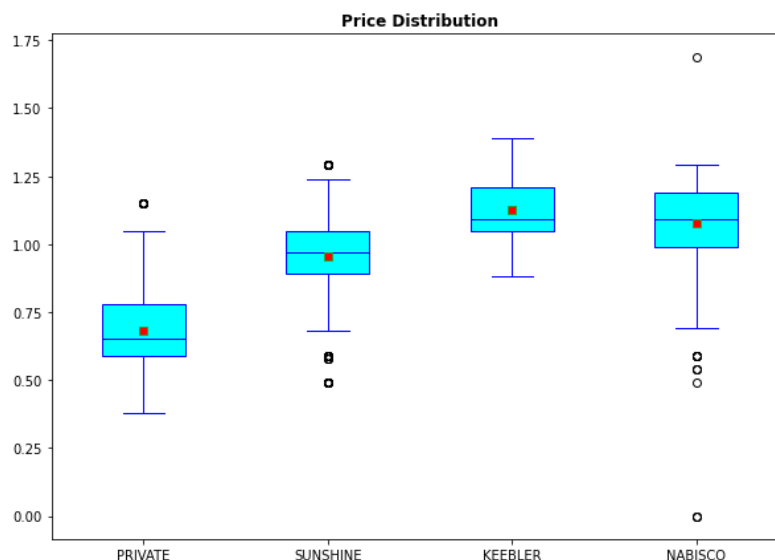
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Introduction:

This report is a detailed exploration of the dataset of Product sales of four different biscuits brands named Private store brand, Keeble, Sunshine and Nabisco. Dataset also contains companies modes of marketing (Display, Featuring in the magazine or both). A few different insights, conclusions and research questions are made from the Exploratory data analysis and different statistics of the data, in this report.

Price distribution:

The main feature of the dataset is the Price of its Product. Let's see the distribution of Price of products irrespective of if there was a sale or not.

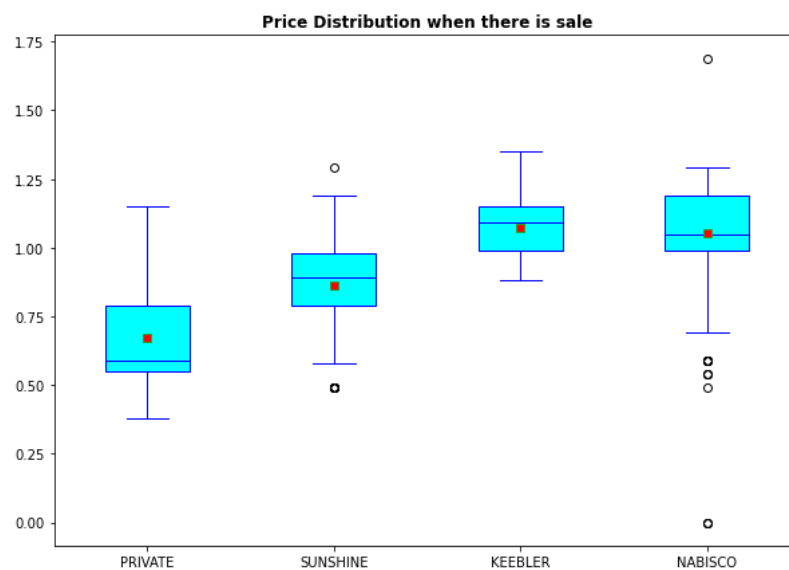


Company	Price_Mean	Price-Sd	Price_CV
PRIVATE	0.6807290014	0.12407	0.18225
SUNSHINE	0.9570321724	0.13292	0.13889
KEEBLER	1.125938603	0.10638	0.094478
NABISCO	1.079225374	0.14478	0.13415

Insights:

- Keebler's average product price is higher as compared to the other three.
- Nabisco is more flexible with the price range as it is more scattered or has a higher standard deviation.
- Keebler hasn't experimented much with its product prices. Because we have symmetric distribution with no outliers.

Let's see the distribution of Price when there was a sale of its product:-



Insights:-

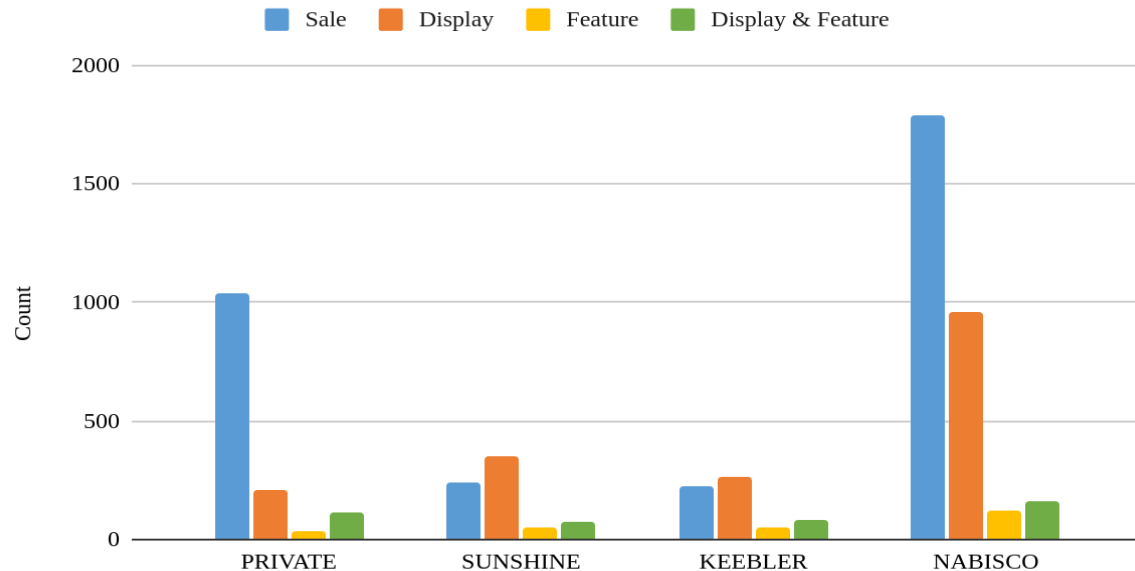
- Nabisco has many outliers therefore Nabisco is experimenting with pricing to attract consumers.
- The mean selling price of private is lower whereas Keebler has a higher mean selling price.

The conclusion from the Insights of Price Distribution:-

Nabisco is always trying to experiment with its Product Prices irrespective of whether sales are happening or not. Keebler is trying to be more stable conservative in case of changing its prices because of its low spread (standard deviation) with symmetric distribution (means most points around the mean). Keebler is also trying to sell its product at relatively high prices.

Let's Explore Companies information like - Sales, Modes of Marketing, with a few insights:-

Companies Info



Insights:

- Private brand of the store has a high number of sales with less marketing as compared to the Sunshine and Keebler brands.
- Both Sunshine and Keebler are spending more on marketing as compared to the revenue

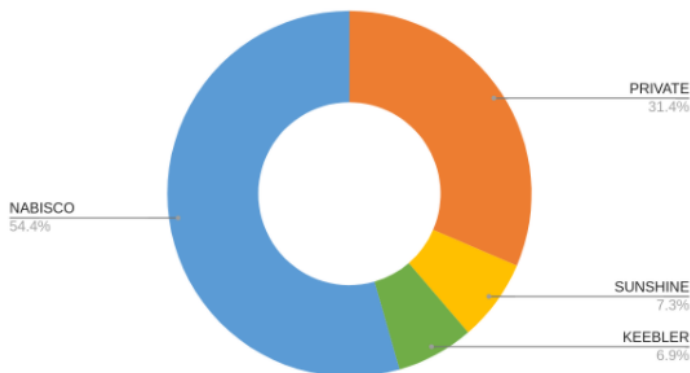
generated through the sales.

- Nabisco is the top performer among all with a higher number of sales with high spending on Display marketing.
- It can be seen that all four are spending more on the Display mode of marketing instead of featuring in the magazine.

Conclusions and questions:-

- Private brands are able to sell in large volumes with less spending on marketing, **How?**
- Sunshine and Keebler are spending more on marketing and yet not making any profits, **Why?**
- People are preferring Nabisco more, **Is it due to its high marketing spending?**

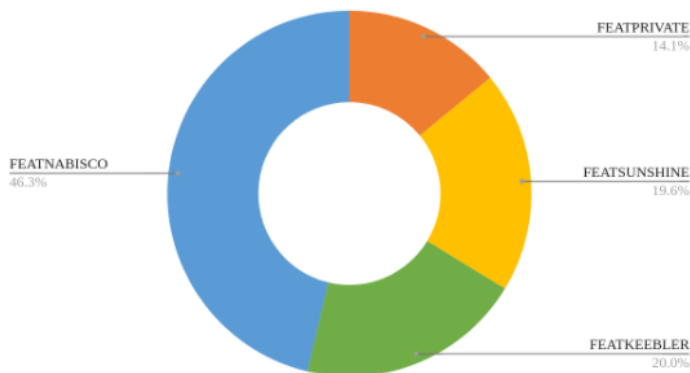
Market Share



Display %



Feature %



Feature & Display

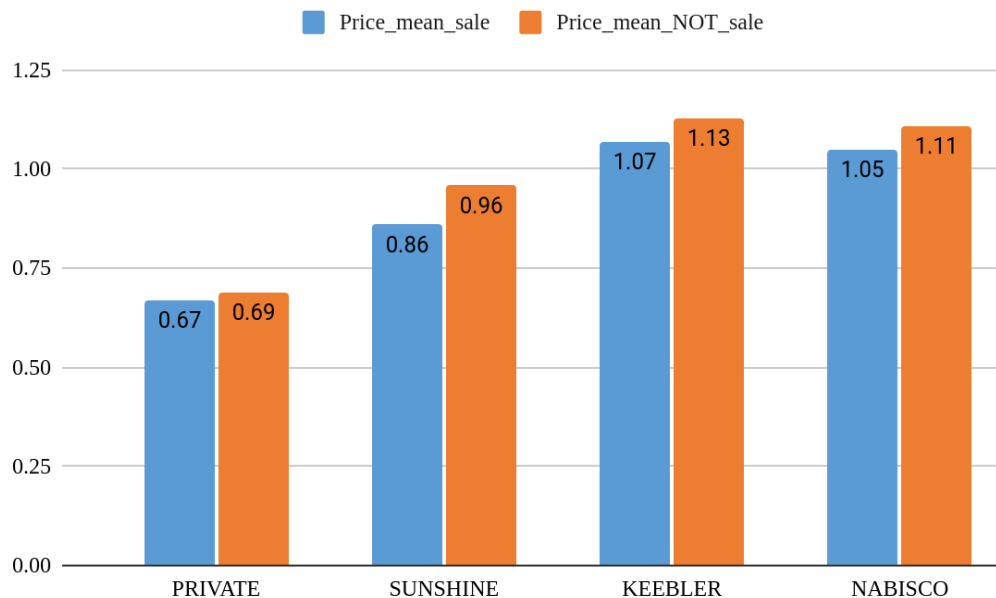


Insight:

- From the market share graph, we can see that Nabisco hold the largest market shares while Keebler, sunshine has lower market shares.
- Nabisco holds the highest marketing share in the display, feature and display + feature as compared to others.
- Whereas sunshine, Keebler spend more on marketing as compared to their market share.

Understanding consumer behaviour:

Price_mean_sale and Price_mean_NOT_sale



Insight

- Sales of the company shows a significant rise when the price is lowered.
- Sunshine tends to lower its price to increase its sales indicating that it may have lower brand value.
- Private tends to show a less significant change in price therefore may have higher brand value as compared to others.

Sale (in k) and Mean Price



Insight

- There is a decrease in the sale as the mean price increase, But Nabisco shows a contrary result.
- Sunshine and Keebler show the least sales as compared to Nabisco and Private.

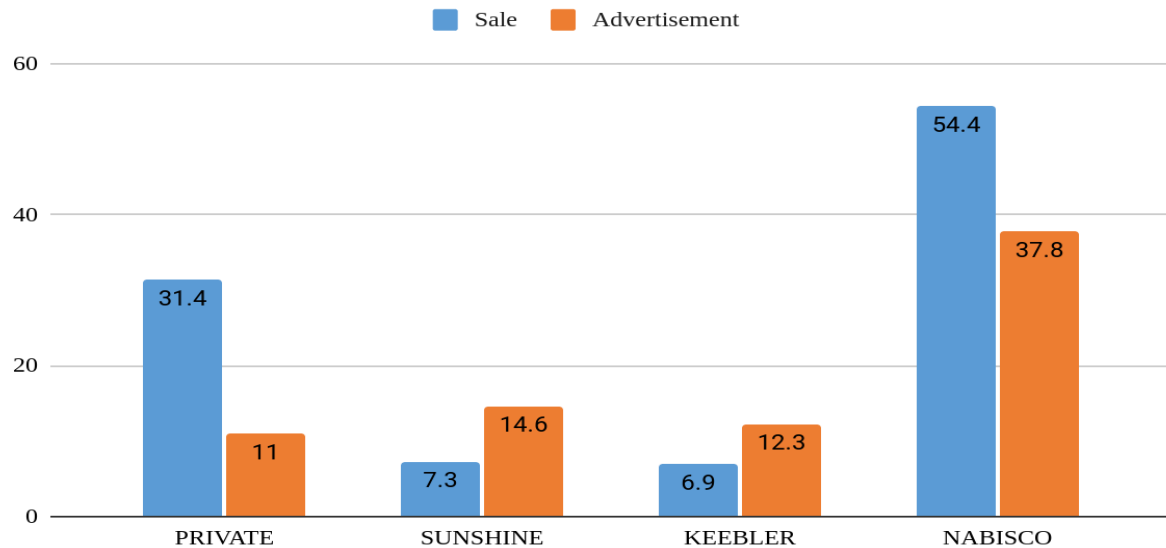
Conclusion:

- There is a trend of decrease in the sale as a mean price increase, But on the contrary Nabisco sales in increase with the increase in mean price. This may be due to its higher brand value or as we can see from the above graph, it's more spending in developing effective marketing strategies as compared to others.

Impact of advertising on Sales:

Marketing their product is an important step for a company to improve sales. Thus it becomes important to look at the effect of advertisement on sales. Whether or not the advertisement is effective or not? How much there is an increase in sales due to advertisement? What percentage of total sales in been due to advertisement?

Sale and Advertisement



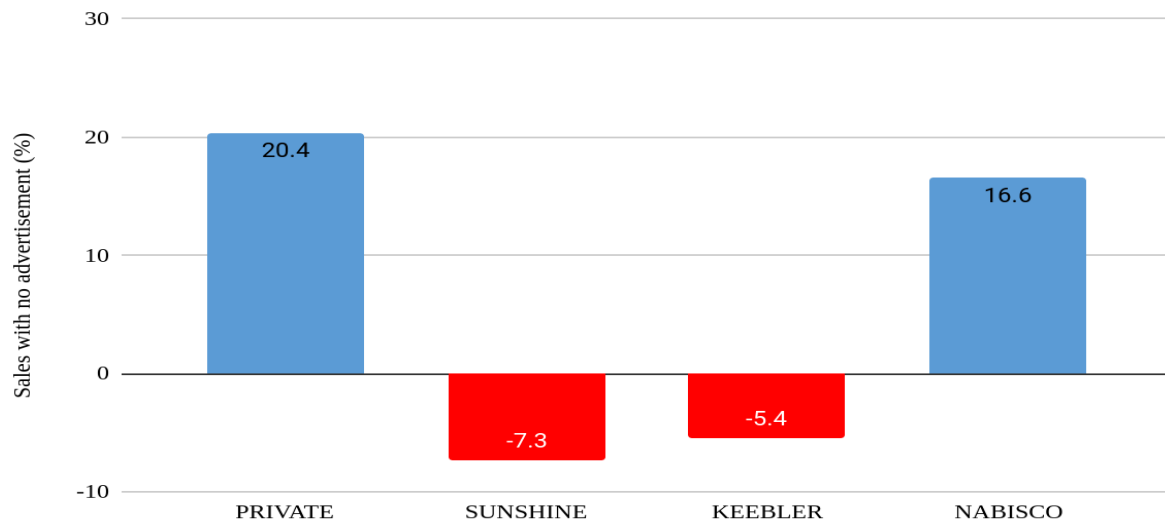
The above sale and advertisement graph show the comparison of sale in percentage can also be called as market share and advertisement in percentage. Let's understand the graph by an example, for Private brand sales is 31.4% and 11% had been advertised. We can also say that 20.4% ($31.4\% - 11\%$) was not been advertised.

Insights:

- Both Private and Nabisco are in profit because of the advertisement of their brand
- On the other hand Sunshine and Keebler seem to be advertising more than their sales. They are spending more on advertisements.
- Nabisco is advertising more compare to other brands and thus have the highest sale
- Private who also had the lowest price have done less advertising relative to others, but it seems that their sales are high compared to Sunshine and Keebler. Thus we can say that they are in profit and advertising their brand increases their brand sale.
- Order of most profitable company with respect to advertisement:

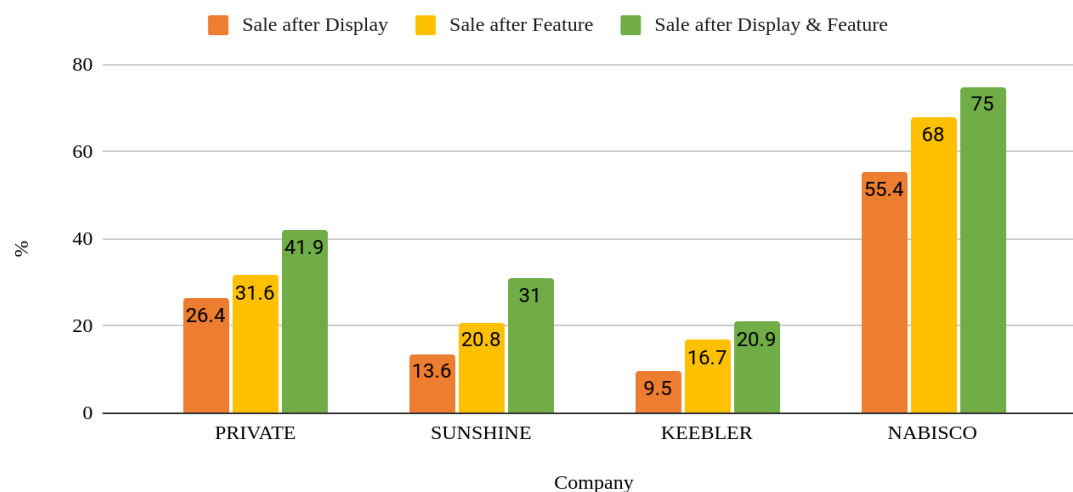
Private > Nabisco > Keebler > Sunshine

Sales with no advertisement (%)



The advertisement method these four brands follow are: Display, Feature and Display & Feature. Each method will have its own impact on sales. We have to find out how much from the advertisement is been converted into the sale with respect to each method. The below graph tells us the conversion rate of each company with respect to the advertising method.

Sale after Display, Sale after Feature and Sale after Display & Feature



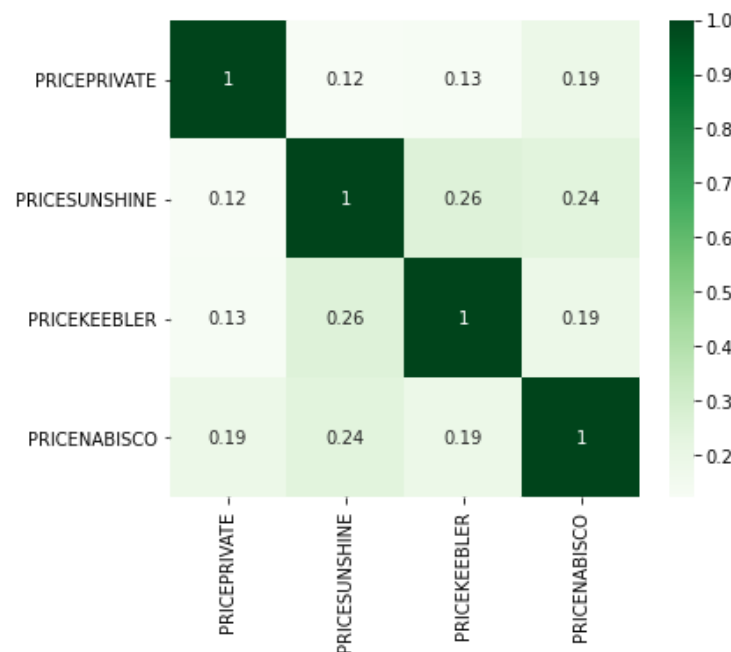
Insights:

- Nabisco has the highest conversion rate in all marketing methods.

- On the other hand, Keebler has the lowest conversion in all methods with respect to other brands.
- The display method has the lowest conversion rate although it is the most used marketing method by the brand's
- Display & Feature marketing method is more profitable compared to others since it has the highest conversion rate for all brands.
- Order of conversion rate:
Display < Feature < Display & Feature

Correlation between the prices of different brands:

Since there were four brands of biscuits they might be competing with each other. The price of one brand can affect the price of another. There might be a correlation between the price of brands. We can check this by plotting the correlation matrix.



As we can see in the correlation matrix above, there is less correlation between the price of the brands. Thus we can say that the price of a brand is independent of the price of another. And also the four brands (Private, Sunshine, Keebler and Nabisco) are not that much interested in competing with each other.