Food Sales Analysis

Analytical Analysis of Food Sales Data
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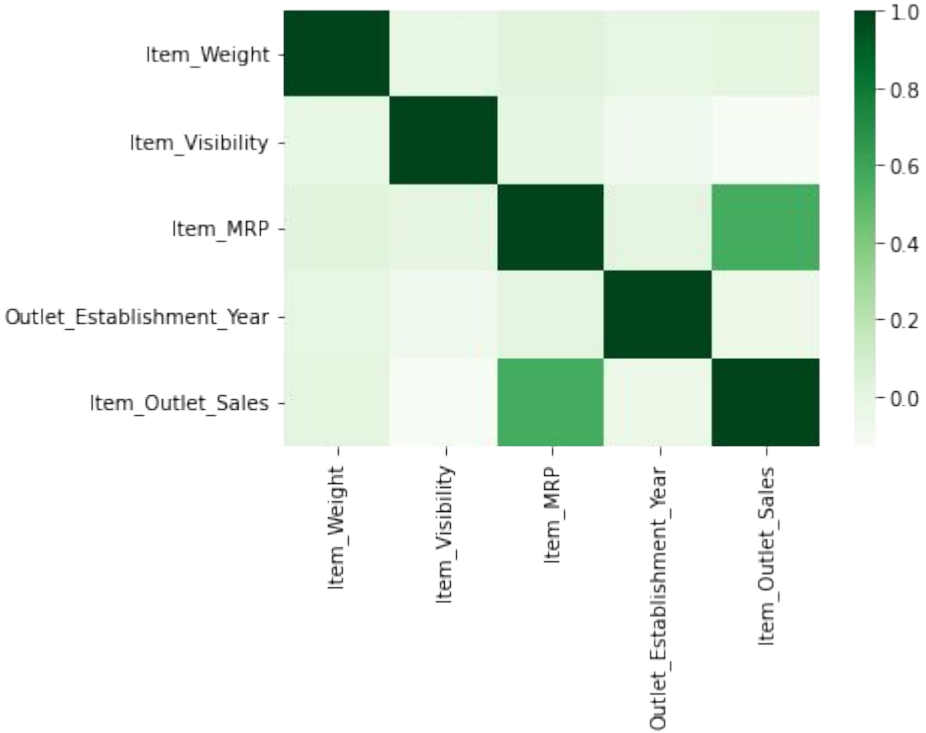
Striving to Grow!

We are analyzing our data from our existing location to determine the best ways to optimize our growth! Items to look for:

1. Where are we making money?
2. How are we making money?
3. What can we adjust to ensure we maintain profitable growth?

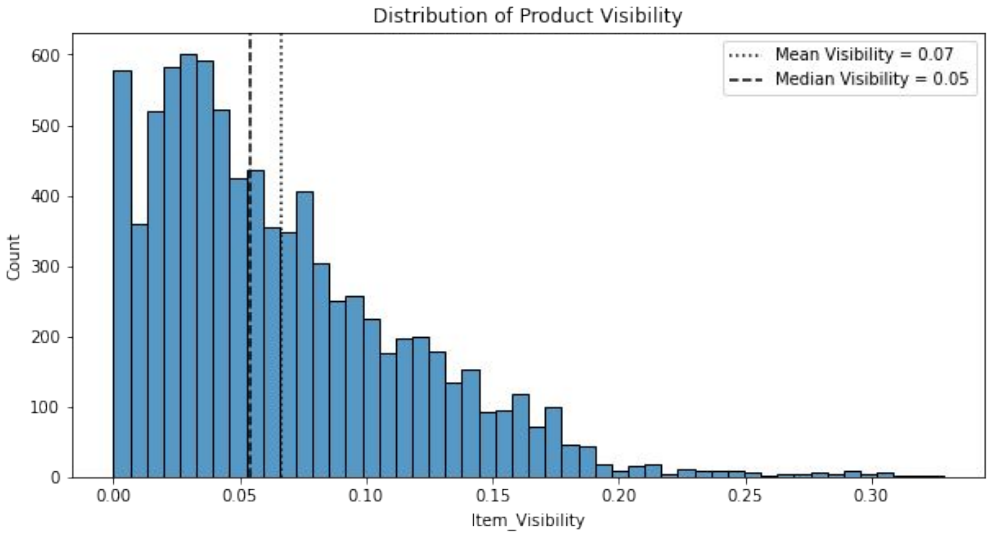
Key Feature Heatmap



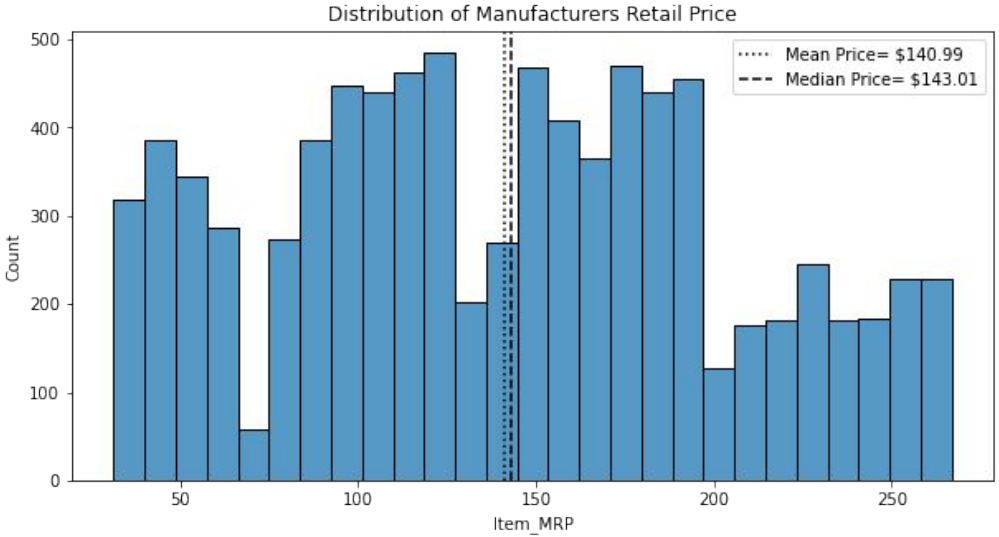
This is a heatmap of available features within the dataset, and the strength of their relationship to sales.

Based on this, we can focus our improvements on those areas where they can be most impactful.

Item Visibility Distribution



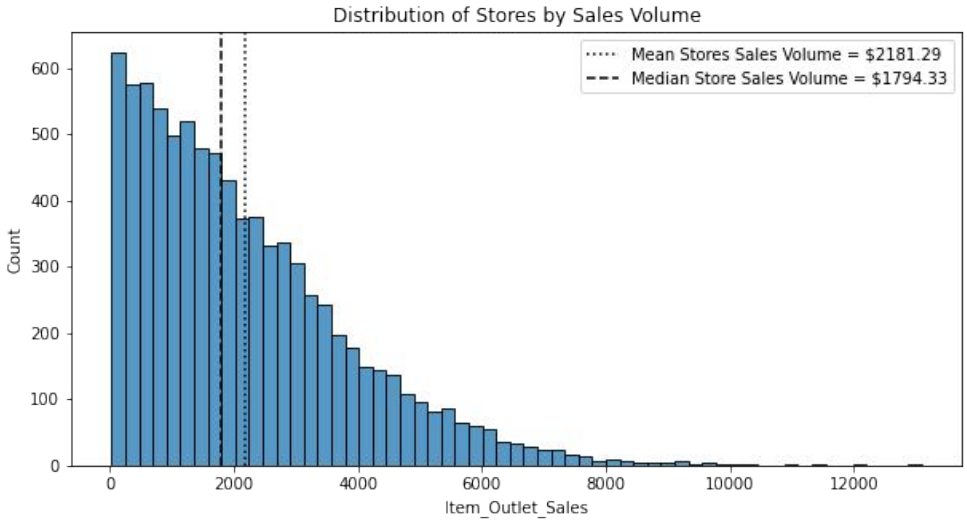
Product Price Distribution



Product price is fairly evenly distributed, as the mean and median values are only.

The slightly lower mean value, however, does display a propensity towards lower cost items being bought in higher volumes.

Store Sales Distributrion



This chart shows that most outlets have fairly low sales, with a few outlets towards the far right end of the sales curve.

This indicates that volume, not price, is likely to be a heavy driver of sales. This does not mean that a larger store will create the necessary volume, but that replenishment of smaller outlets may boost throughput.

Modeling Future Sales

Linear Regression Model

R^2

0.3553295433207919

0.3458992702579631

RMSE

1381.257999274221

1343.3722705549785

Bagged Tree Model

R^2

0.9362399476939753

0.5494823964732938

RMSE

1381.257999274221

1343.3722705549785

Random Forest Model

R^2

0.9362399476939753

0.5494823964732938

RMSe

1381.257999274221

1343.3722705549785

Model Selection:

The Bagged Tree Model is the one we will select going forward.

Though it is high variance, we can look to tune the model to improve performance, and is is a simpler model to use than the more rigorous Random Forest Model (there was no discernable difference between the two on this model).

The Linear Regression Model is completely inaccurate, as it only captured 36% of the of the reasoning behind the movements in sales.