

# Pricing Strategy Development

June 7, 2024

```
[1]: import pandas as pd
import numpy as np
```

## 0.0.1 Market Analysis

```
[2]: # Load Market Analysis Data
market_analysis_df=pd.read_csv(r"C:\Users\USER\Documents\Data Portfolio\
↳Projects\Retail\Pricing Strategy Development\Datasets\Market_Analysis.csv")
market_analysis_df.head()
```

```
[2]: Competitor Name Product Type Price Market Share (%) Annual Sales (Units) \
0 Kibble King Regular 25 20 50000
1 Pet Feast Premium 30 15 30000
2 Happy Tails Regular 22 25 55000
3 NutriPaws Premium 35 10 20000
4 EcoEats Organic 40 30 60000
```

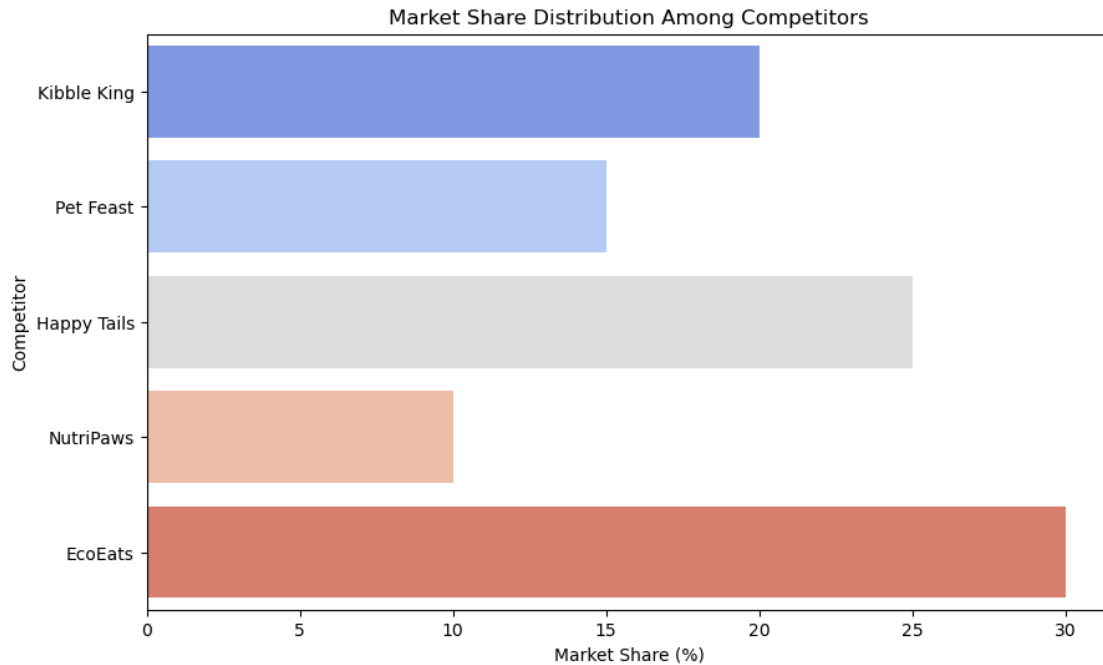
```
Product Features
0 Grain-free
1 High Protein
2 No additives
3 Grain-free
4 All Natural
```

```
[3]: #Plot share Distribution

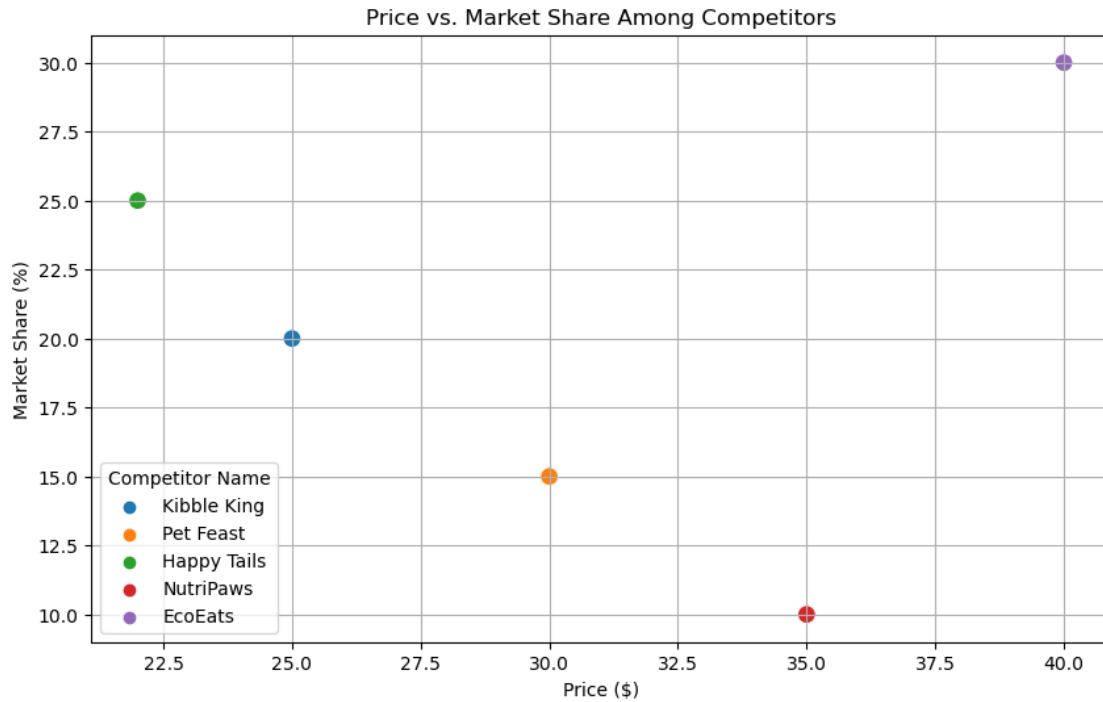
import matplotlib.pyplot as plt
import seaborn as sns
```

```
[4]: # Plotting market share distribution

plt.figure(figsize=(10, 6))
sns.barplot(x='Market Share (%)', y='Competitor Name', data=market_analysis_df,
↳palette='coolwarm')
plt.title('Market Share Distribution Among Competitors')
plt.xlabel('Market Share (%)')
plt.ylabel('Competitor')
plt.show()
```



```
[5]: # Plotting price vs market share
plt.figure(figsize=(10, 6))
sns.scatterplot(x='Price', y='Market Share (%)', hue='Competitor Name',
               data=market_analysis_df, s=100)
plt.title('Price vs. Market Share Among Competitors')
plt.xlabel('Price ($)')
plt.ylabel('Market Share (%)')
plt.grid(True)
plt.show()
```



[ ]:

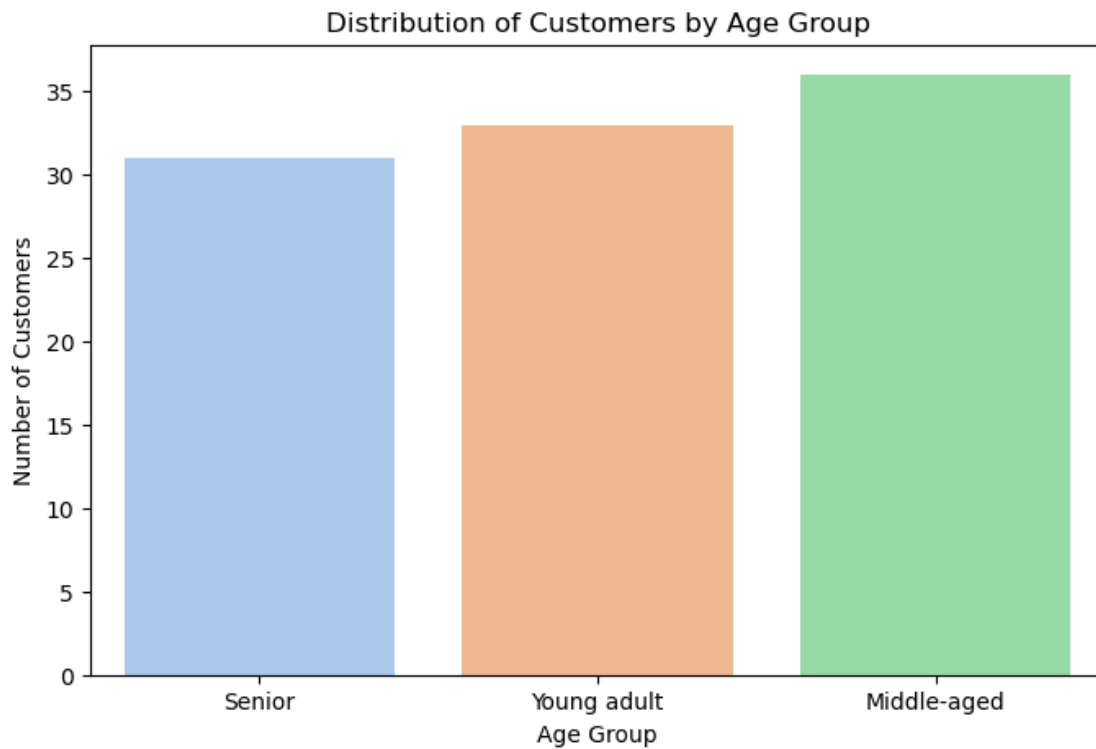
## 0.0.2 Customer Segmentation

```
[7]: #Load Customer Segmentation data
customer_segmentation_df=pd.read_csv(r"C:\Users\USER\Documents\Data Portfolio_
↳Projects\Retail\Pricing Strategy Development\Datasets\Customer_Segmentation.
↳csv")
customer_segmentation_df.head()
```

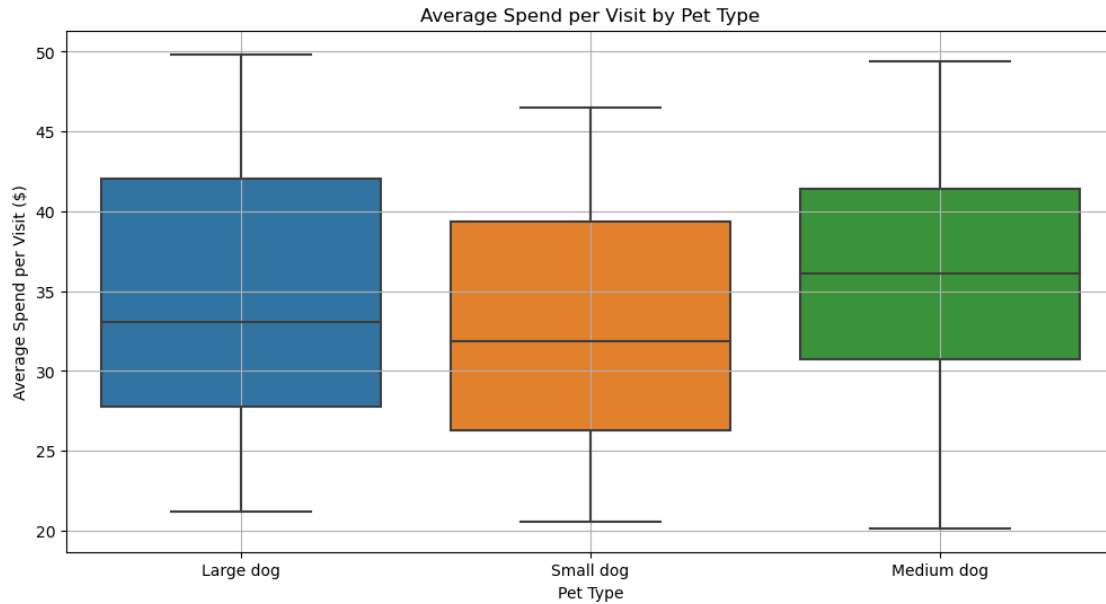
```
[7]: Customer ID    Age Group    Pet Type    Buying Frequency \
0           1      Senior    Large dog           1
1           2  Young adult    Large dog           2
2           3      Senior    Large dog           1
3           4      Senior    Small dog           2
4           5  Young adult    Large dog           2
```

	Average Spend per Visit	Preferred Product Type	Sensitivity to Price
0	33.45	Premium	High
1	49.83	Regular	High
2	25.28	Premium	High
3	20.54	Regular	Low
4	34.82	Premium	Low

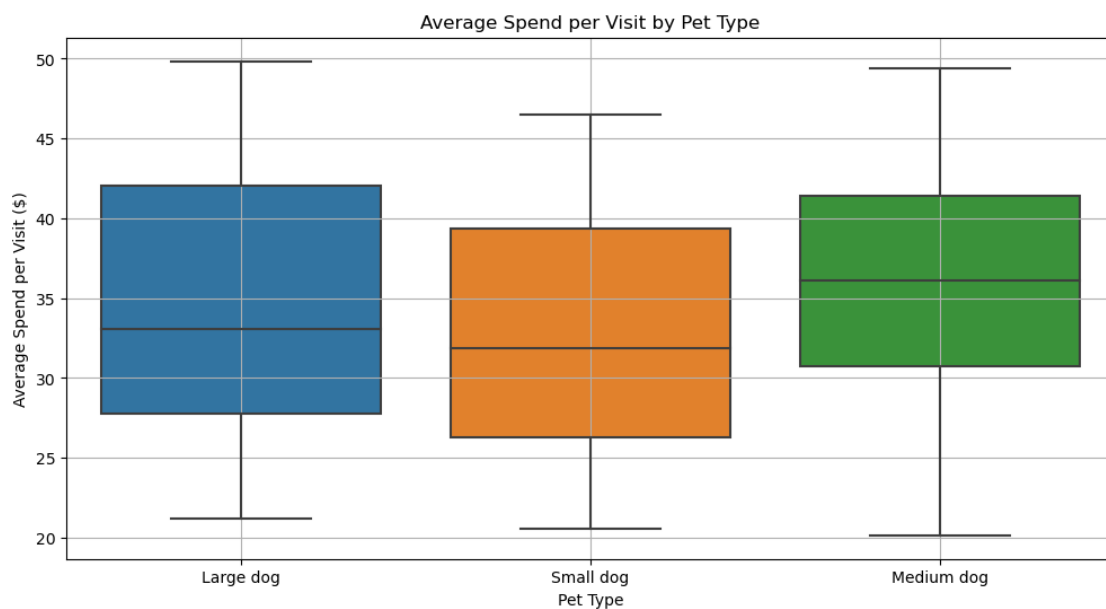
```
[8]: # Plot distribution of customers by age group
plt.figure(figsize=(8, 5))
sns.countplot(x='Age Group', data=customer_segmentation_df, palette='pastel')
plt.title('Distribution of Customers by Age Group')
plt.xlabel('Age Group')
plt.ylabel('Number of Customers')
plt.show()
```



```
[9]: # Visualization of buying frequency and average spend per visit by pet type
plt.figure(figsize=(12, 6))
sns.boxplot(x='Pet Type', y='Average Spend per Visit', data=customer_segmentation_df)
plt.title('Average Spend per Visit by Pet Type')
plt.xlabel('Pet Type')
plt.ylabel('Average Spend per Visit ($)')
plt.grid(True)
plt.show()
```



```
[11]: # Buying frequency and average spend per visit by pet type
plt.figure(figsize=(12, 6))
sns.boxplot(x='Pet Type', y='Average Spend per Visit',
            data=customer_segmentation_df)
plt.title('Average Spend per Visit by Pet Type')
plt.xlabel('Pet Type')
plt.ylabel('Average Spend per Visit ($)')
plt.grid(True)
plt.show()
```



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```
[10]: #Loading Cost Analysis Data
cost_analysis_df=pd.read_csv(r"C:\Users\USER\Documents\Data Portfolio\
↳Projects\Retail\Pricing Strategy Development\Datasets\Cost_Analysis.csv")
cost_analysis_df.head()
```

```
[10]:  Item ID      Ingredient  Cost per Unit ($)  Required Units per Batch  \
0      K1           Meat           1.5             100
1      K2           Grains           0.5             200
2      K3      Additives           0.2             150
3      K4      Packaging           0.3             300
4      K5  Distribution           0.4              1

      Total Cost per Batch ($)
0              150
1              100
2               30
3               90
4               40
```

```
[13]: # Calculation of total cost per unit of finished product
cost_analysis_df['Cost per Batch ($)'] = cost_analysis_df['Cost per Unit ($)']_
↳* cost_analysis_df['Required Units per Batch']
total_cost_per_batch = cost_analysis_df['Cost per Batch ($)'].sum()
total_units_produced = cost_analysis_df['Required Units per Batch'].iloc[0]  #_
↳assuming all are same
total_cost_per_unit = total_cost_per_batch / total_units_produced
```

```
[14]: cost_analysis_df
```

```
[14]:  Item ID      Ingredient  Cost per Unit ($)  Required Units per Batch  \
0      K1           Meat           1.5             100
1      K2           Grains           0.5             200
2      K3      Additives           0.2             150
3      K4      Packaging           0.3             300
4      K5  Distribution           0.4              1

      Total Cost per Batch ($)  Cost per Batch ($)
0              150             150.0
1              100             100.0
2               30              30.0
3               90              90.0
4               40               0.4
```

```
[15]: total_units_produced
```

```
[15]: 100
```

```
[16]: total_cost_per_batch
```

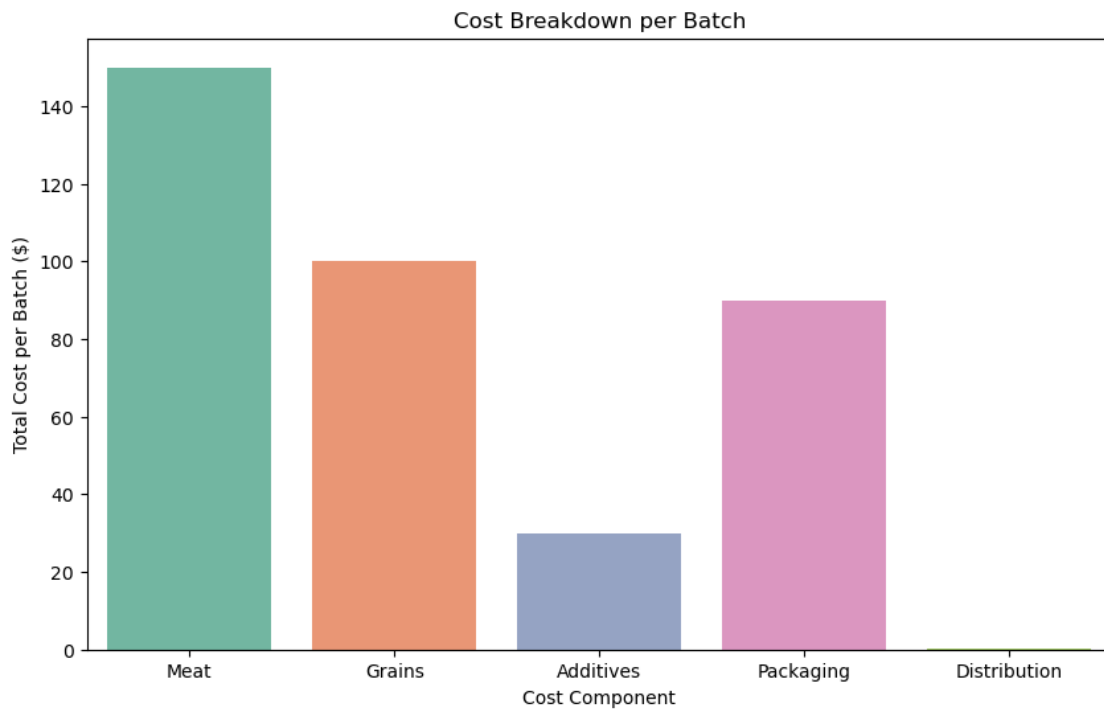
```
[16]: 370.4
```

```
[17]: total_cost_per_unit
```

```
[17]: 3.7039999999999997
```

```
[ ]:
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```
[18]: # Visualization of cost breakdown
plt.figure(figsize=(10, 6))
sns.barplot(x='Ingredient', y='Cost per Batch ($)', data=cost_analysis_df,
            palette='Set2')
plt.title('Cost Breakdown per Batch')
plt.xlabel('Cost Component')
plt.ylabel('Total Cost per Batch ($)')
plt.show()
```



```
[19]: total_cost_per_batch, total_cost_per_unit
```

[19]: (370.4, 3.7039999999999997)

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