Customer Segmentation

Marketing Analysis

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Problem Statement

Assist a Fresh Harvest Grocer, operating with a tight budget, in optimizing its products identifying the customer segment most inclined to purchase the product. By targeting this specific segment, the business can effectively allocate resources, ensuring that marketing efforts are not wasted on customers unlikely to convert, thus maximizing return on investment.

Analysis

Data Cleaning

- 2240 observations
- Removed null values, dropped unnecessary columns

Income was the only column with null values (24 missing)

Feature Engineering

- Aggregated old columns
- Introduced new columns

Ex: introduced Age, and Household Size

Machine Learning

- Built clustering model
- KMeans with PCA

0.13 silhouette score

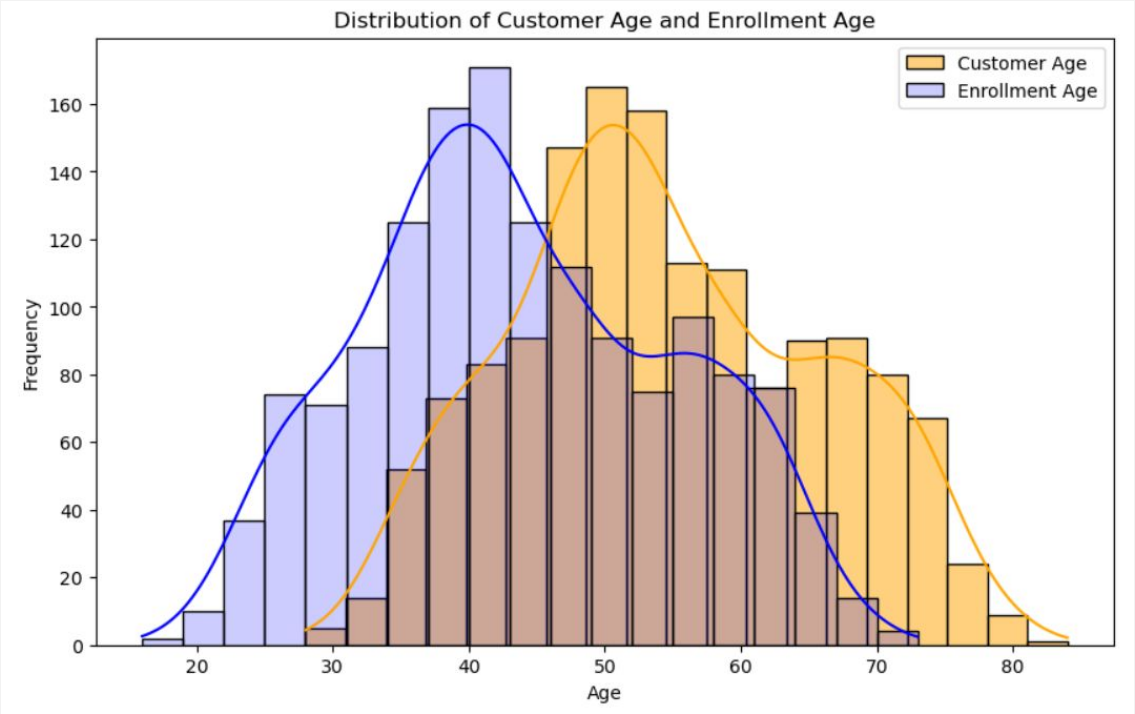
Exploratory Data Analysis

Question

Customer demographics?
Spending?
Response?

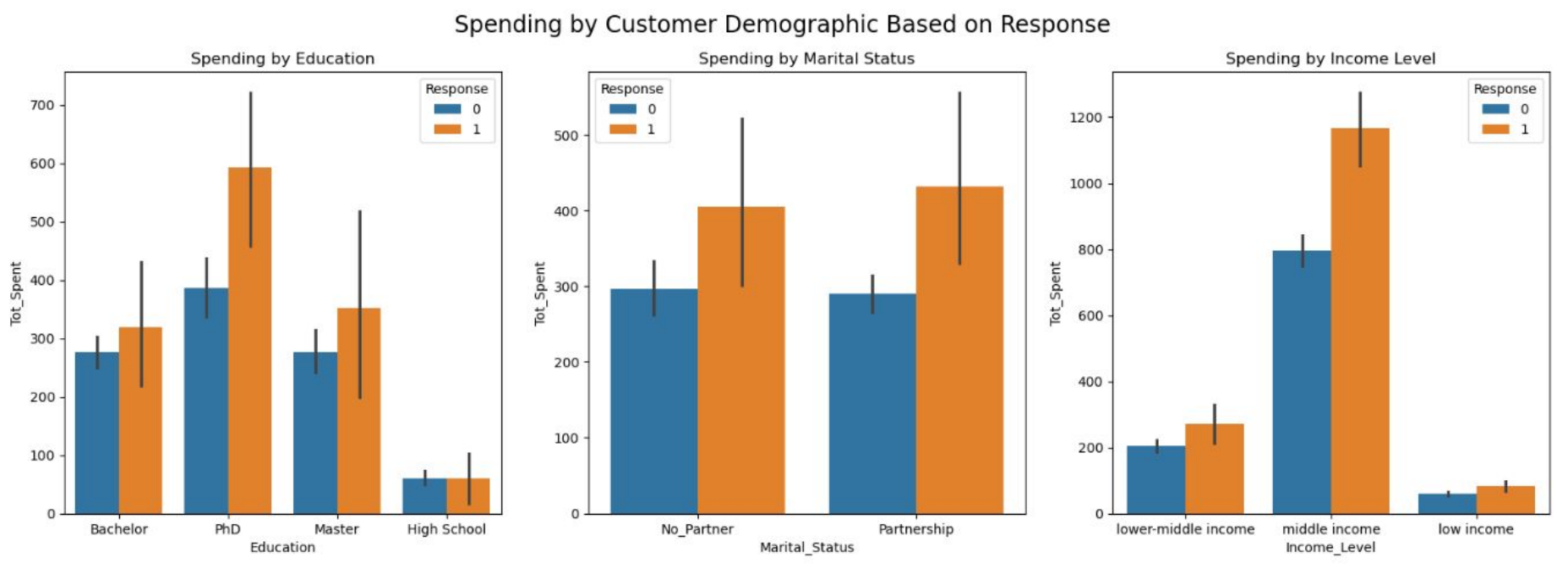
Answer

Average Age: 54.5
Average Spent: $304.73
Total Accepted Campaigns: 1450



- Difference between average age and enrollment age
  - Avg Age = 54.5
  - Enroll Age = 43.6

- Customer has longevity with the company, engaging with the company for a considerable period, during which they aged


Spending by Customer Demographic Based on Response
Spending by Education
Response
0
1
Tot_Spent
0
100
200
300
400
500
600
700
Bachelor
PhD
Master
High School
Education
Spending by Marital Status
Response
0
1
Tot_Spent
0
100
200
300
400
500
No_Partner
Partnership
Marital_Status
Spending by Income Level
Response
0
1
Tot_Spent
0
200
400
600
800
1000
1200
lower-middle income
middle income
low income
Income_Level

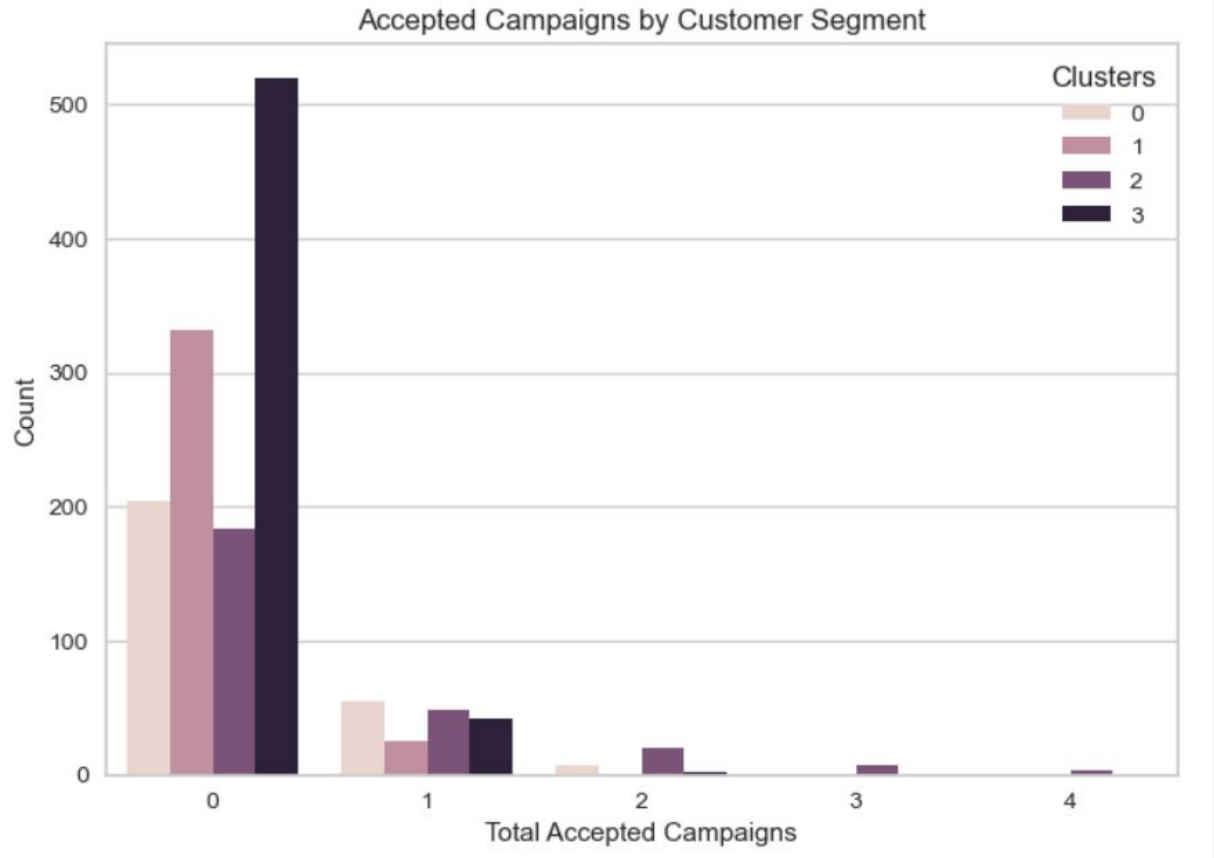
Customer Segments

Customer 0 — Age: ~ 60 | Bachelor's, Partnered, Middle Income

Customer 1 — Age: ~49 | Bachelor's, Partnered, Lower Income

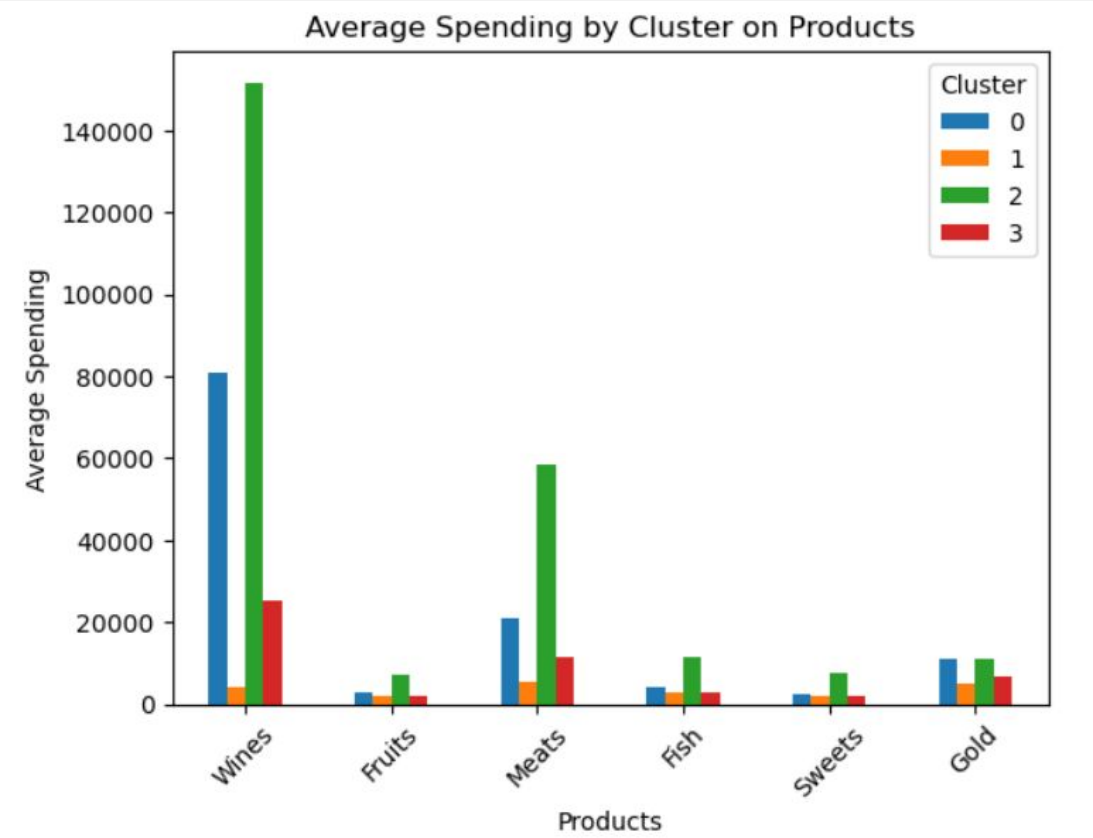
Customer 2 — Age: ~58 | Bachelor's, Partnered, Upper-middle income

Customer 3 — Age: ~55 | Bachelor's, Partnered, Lower-middle income



Few customers have accepted the company's campaigns.

- Segment 3 customers are less likely to accept campaigns
- Segment 2 customers show declining acceptance rates across campaigns



- Customers in segment 2 spend the most out of all customers
- The top product they favor is wine

Conclusion & Recommendations

We should target customers in segment 2 with different wine campaigns. This includes customers

- in their late 50s with a Bachelor's Degree
- average enrollment date of ~3938 days

We can retain more revenue as they are more likely to accept campaigns out of all customers and have higher spending rates in that category

Thanks!

Do you have any questions?

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Sources:

Slides

Flaticon

Freepik

https://finance.yahoo.com/news/income-fall-americas-lower-middle-122100515.html

https://www.studera.nu/startpage/higher-education/sweden/levels-degrees/#;h20