

# **Optimizing Supermarket Sales: A Comprehensive Customer Analysis**

**Capstone 2**

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**JCDSOL 017**



# Agenda

## Topics Covered

Data Understanding

Problem Statement

Analysis & Visualization

Recommendations

# Data Understanding

## Supermarket Customer Dataset



### People

ID, Age, Age\_Group,  
Education,  
Marital\_Status, Income,  
Children, Family\_Size

### Product

Wine, Fruit, Meat, Fish,  
Sweet, Gold

### Promotion

Accepted\_Campaign  
(Campaign 1-5)

### Purchases

Web, Catalog, Store

**Data time range 2012-2014**  
**2212 Customer Data**

# Problem Statement

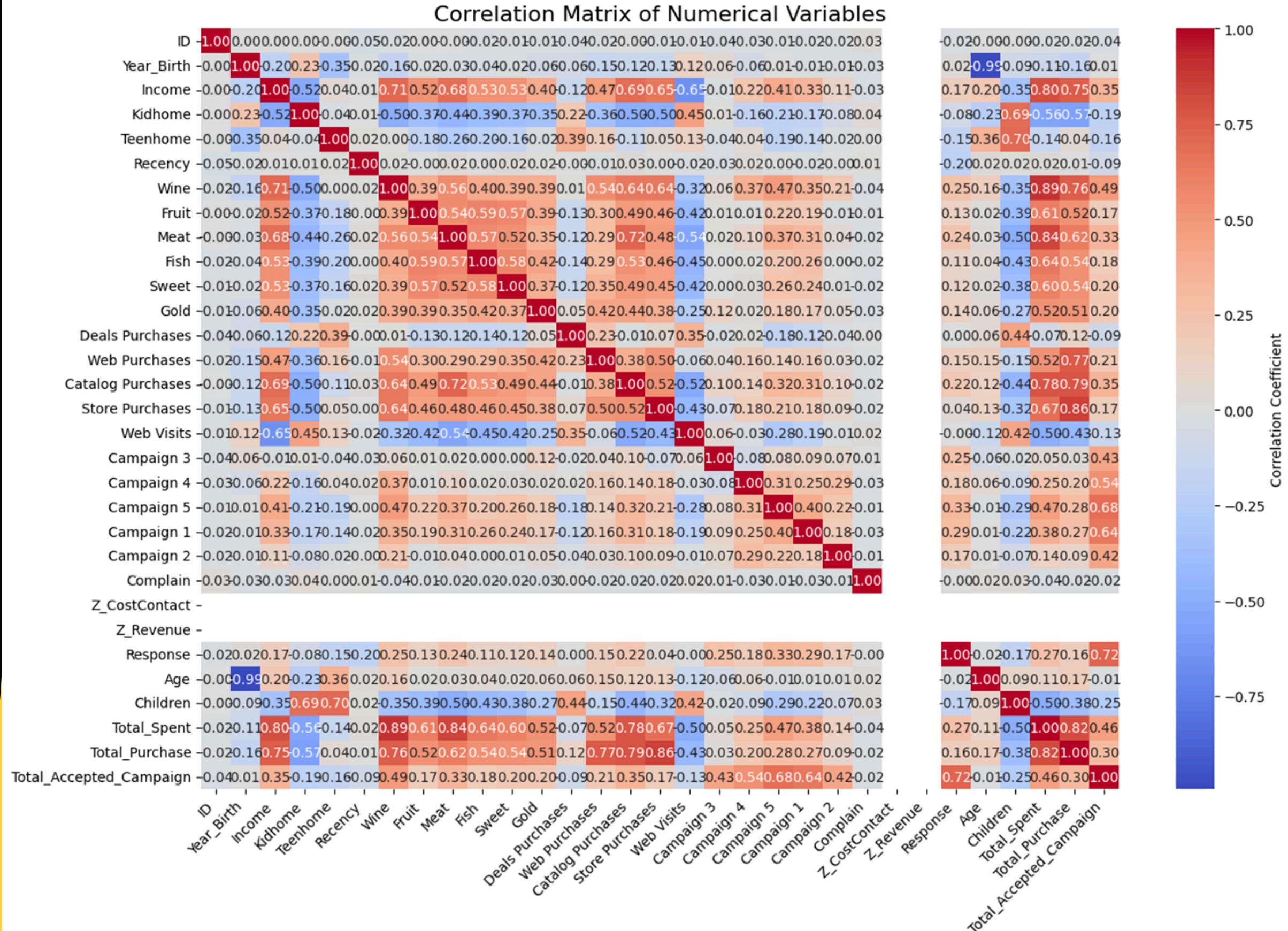
A Supermarket company wants to research the market segmentation of their products, some steps that need to be taken are to identify:

- What products have the highest and lowest sales rates?
- Who are the primary customers based on demographics?
- Which sales channels are most effective?
- How does campaign participation impact customer spending?\
- Which customer segments should be targeted to improve sales?
- How is the relation of Each Customer Category vs Amount Spent of Products?
- How effective is the number of campaigns received with the level of product sales?
- Which is the best place to sell and get the most product purchases?

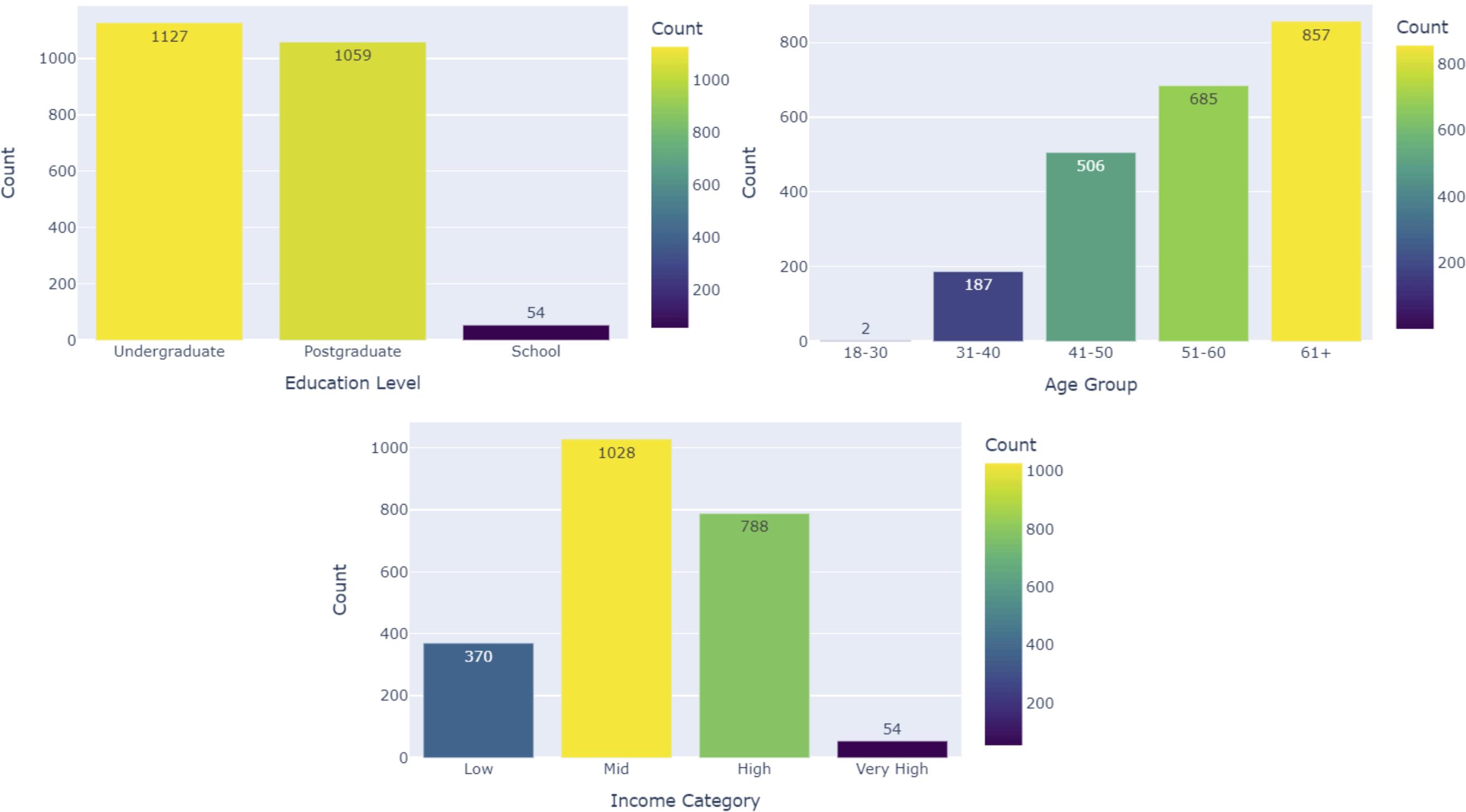
# Analysis & Visualization

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# Data Correlation Matrix



# Customer Demographic



## Education

- Most customers are either undergraduates or postgraduates, Only a small fraction have schooling education.

## Age Group

- Majority of customers are aged 61+, followed by the 51-60 group, showing a trend toward older customers.

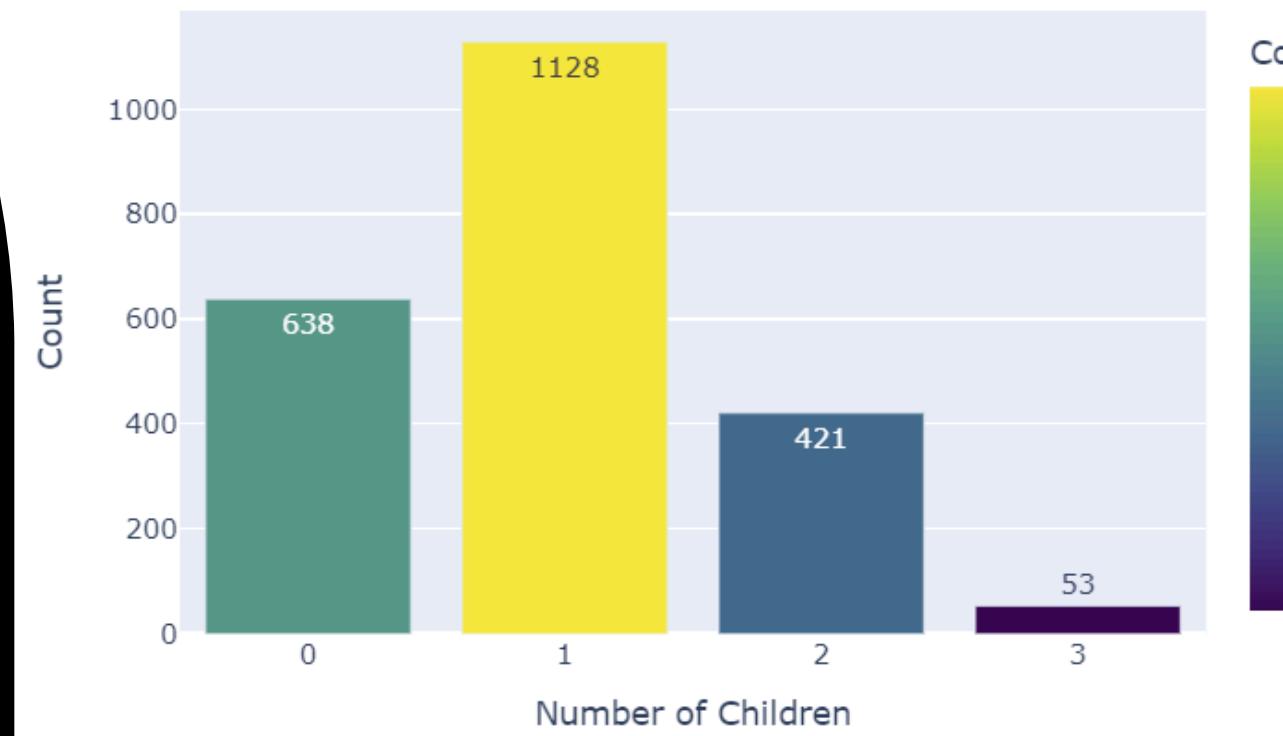
## Income Category

- Most customers fall into the Mid income category, followed by the High category.

# Customer Demographic

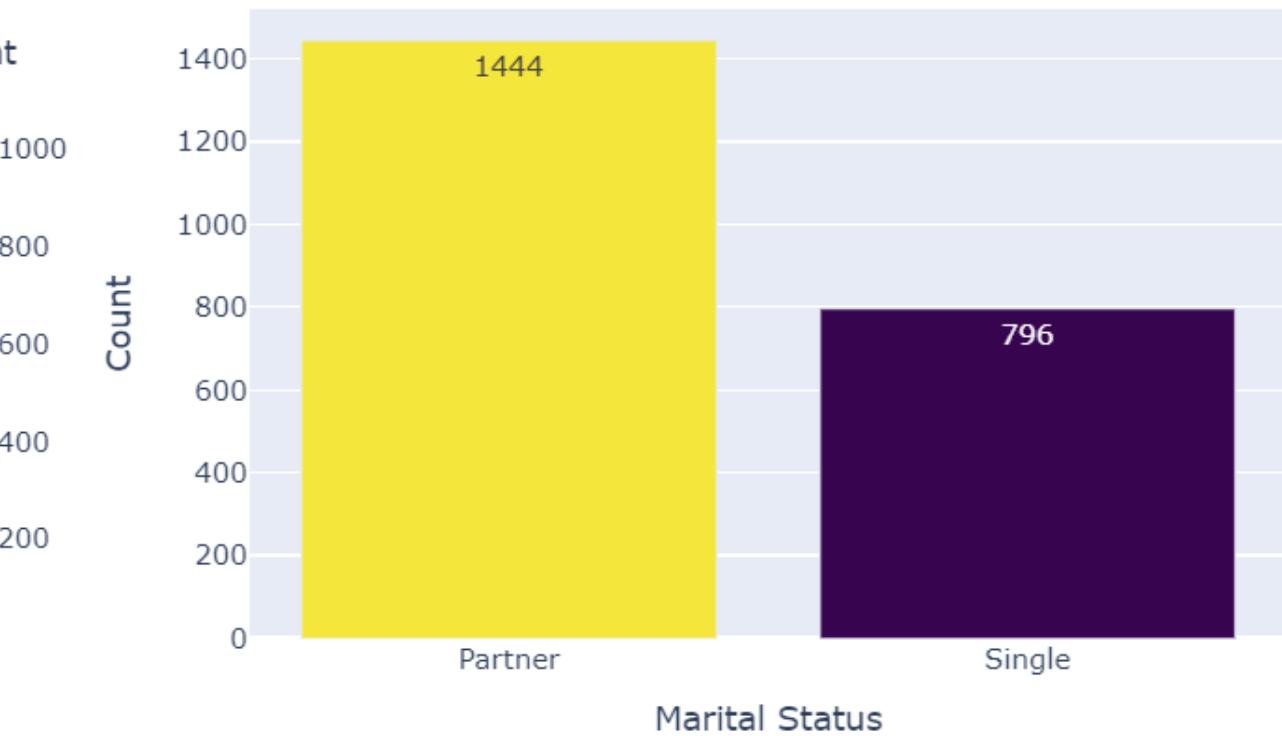
## Number of Children:

- The majority of customers have 1 child, followed by those with no children (638). A smaller portion has 2 children or more.



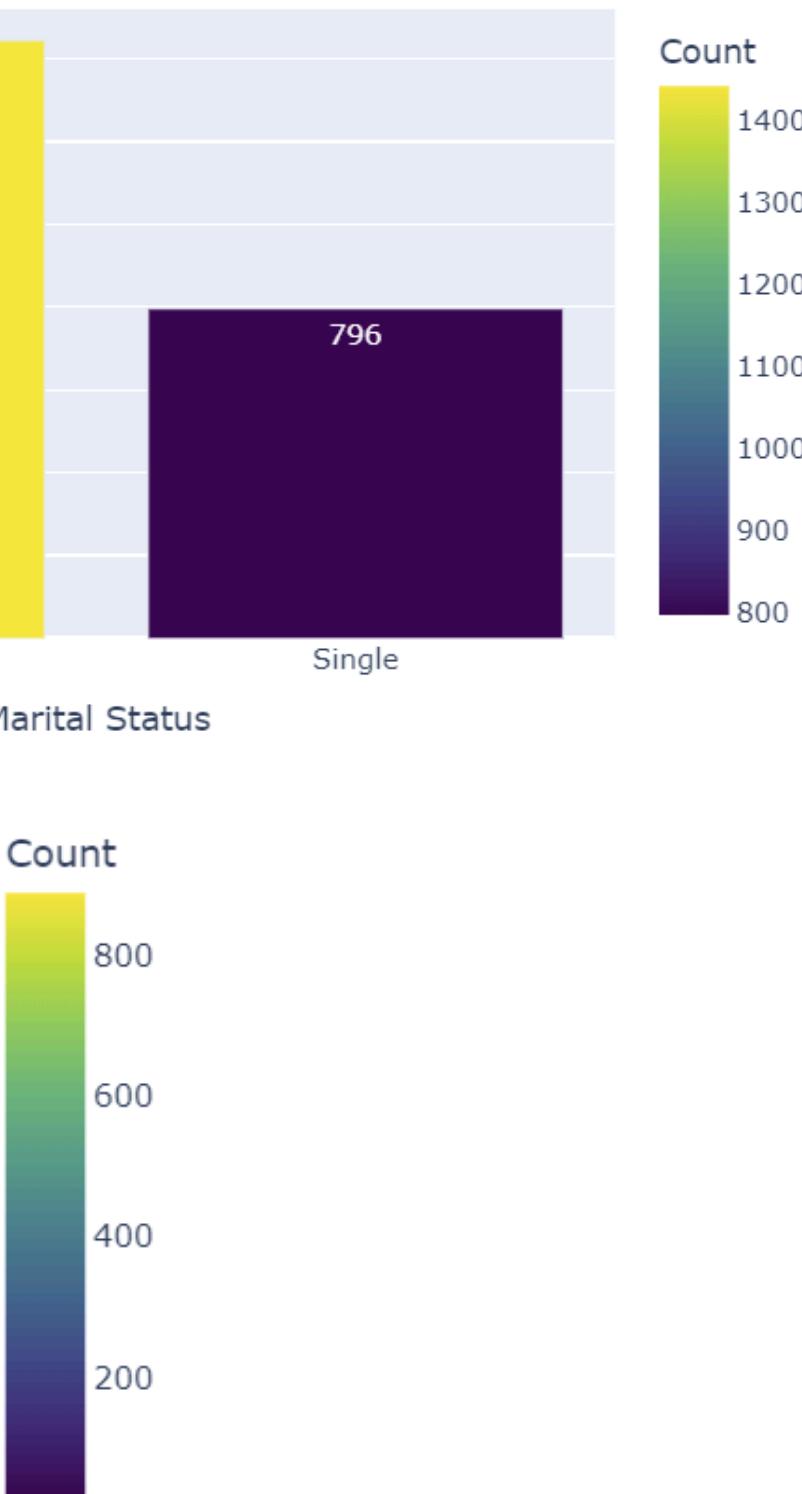
## Marital Status:

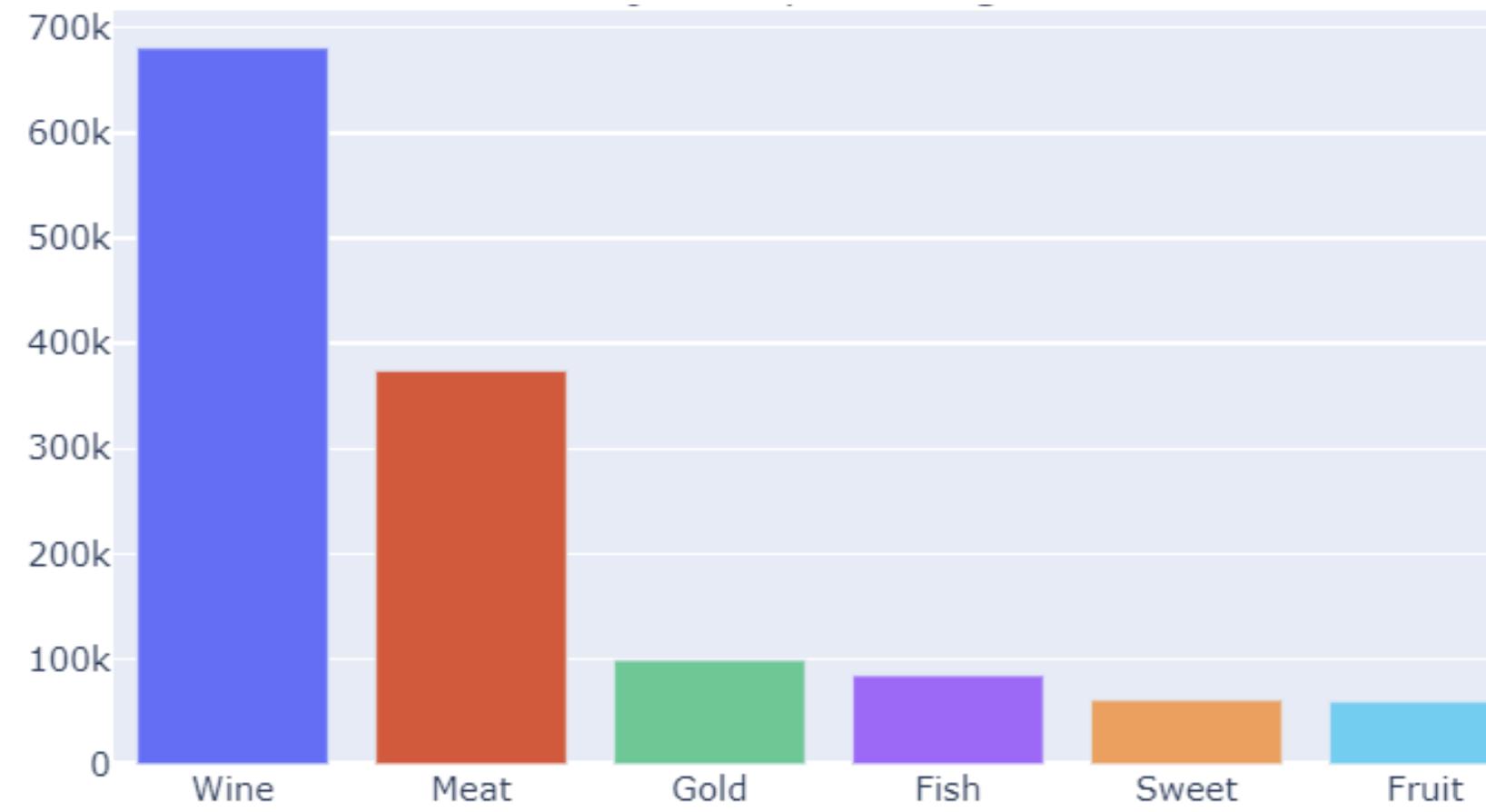
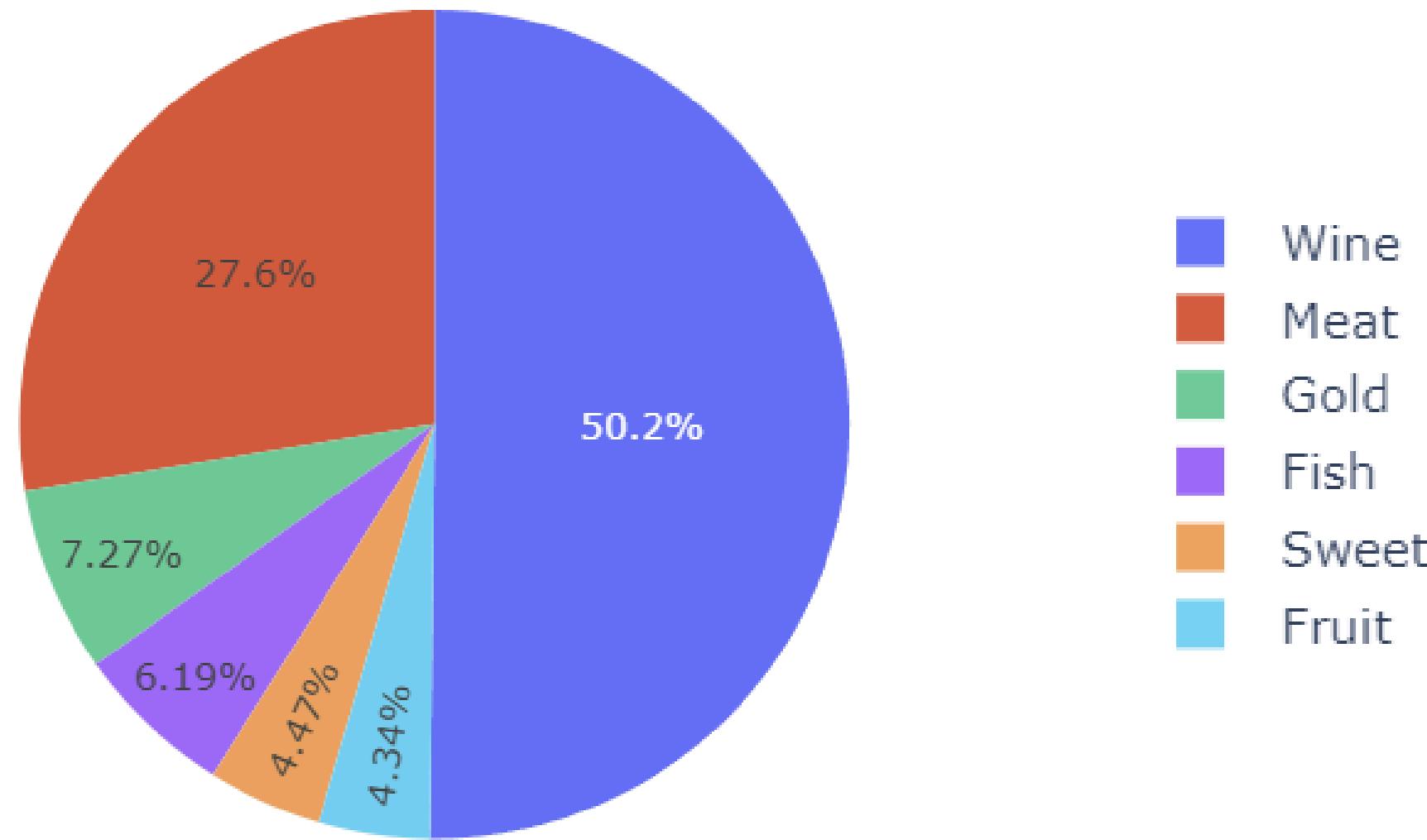
- Most customers are Partnered, while a smaller segment is Single.



## Family Members:

- Families with 3 members are the largest group, followed by those with 2 members. Families with 4 members or more are less common.





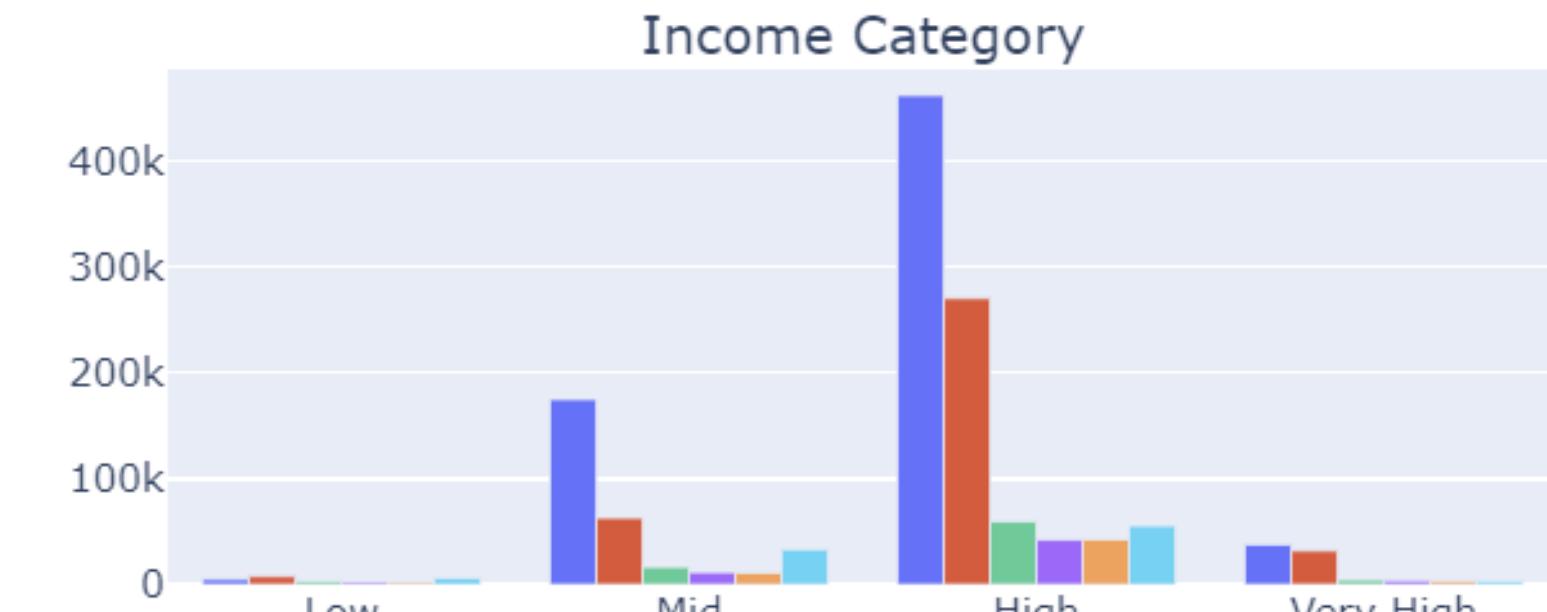
# Best Selling Products

- Wine is the top-selling product, with over 50% of total sales volume, followed by Meat at 27.6%.
- Categories such as Fish (7.27%), Gold (6.19%), Sweet (4.43%), and Fruit (4.34%) have similar, minor shares.

# Customer Category vs Product Purchased

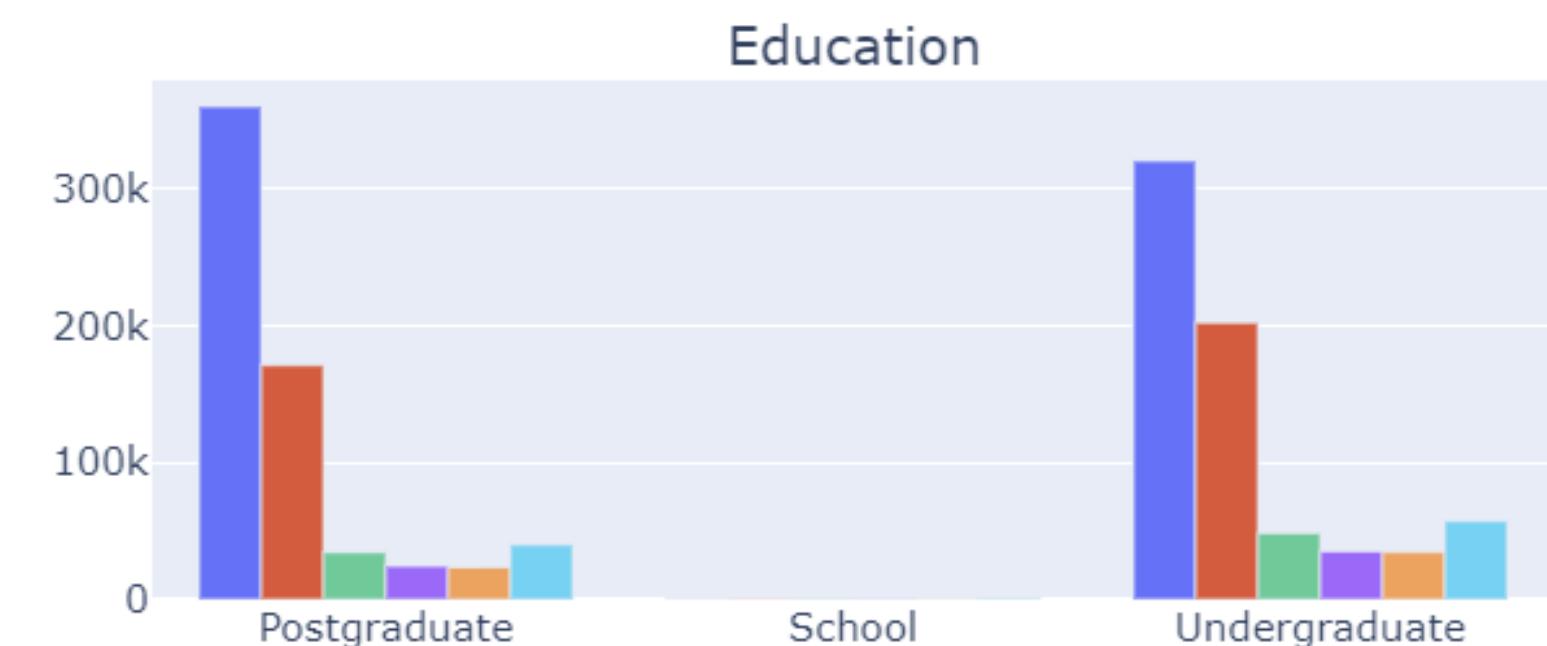
## Income Category

- Customers in the High and Mid income categories dominate purchases, especially for Wine and Meat.



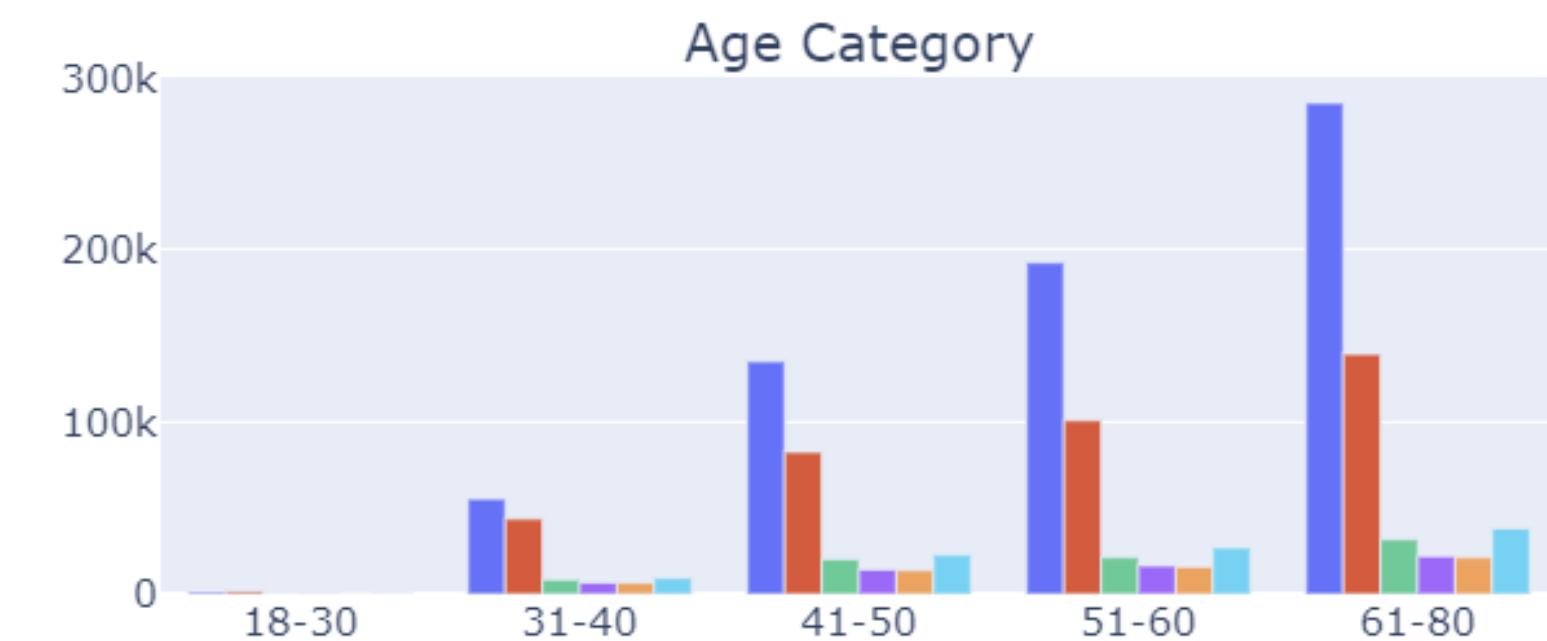
## Education

- Customers with no children have the highest purchase volume, especially for Wine and Meat.



## Age Category

- The 61+ age group has the highest purchase volume, particularly for Wine and Meat.



Legend:

- Wine (Blue)
- Meat (Orange)
- Fish (Green)
- Sweet (Purple)
- Fruit (Brown)
- Gold (Cyan)

# Customer Category vs Product Purchased

## Marital Status

- Customers who are Partnered dominate purchases, particularly for Wine and Meat, which are the most popular products.

## Children

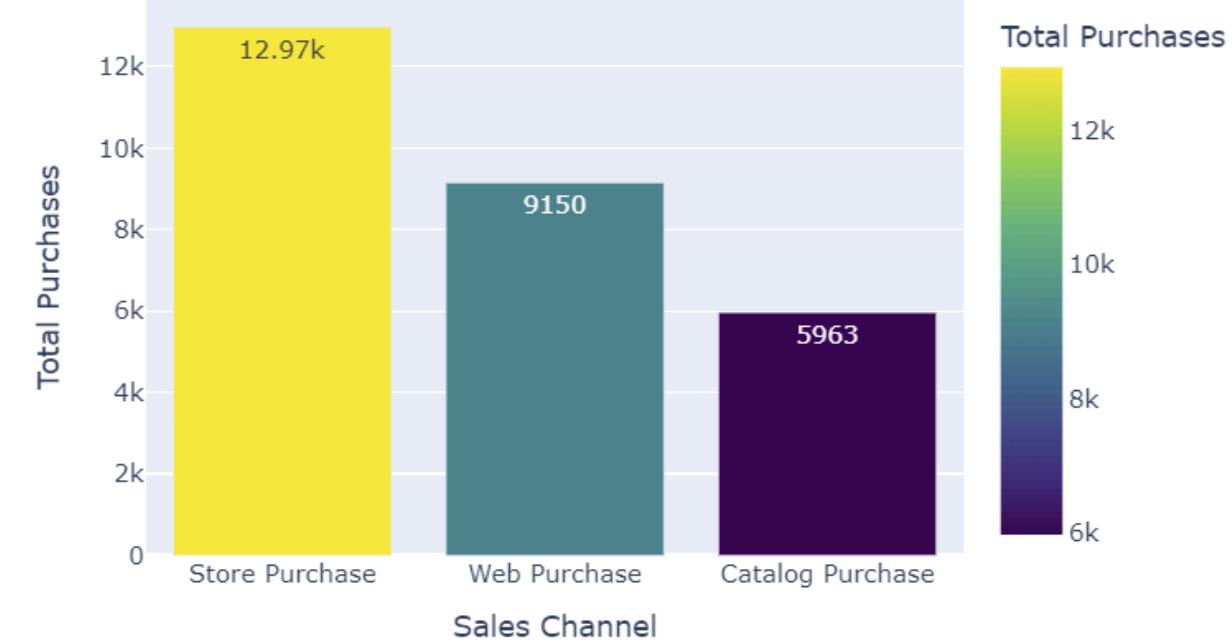
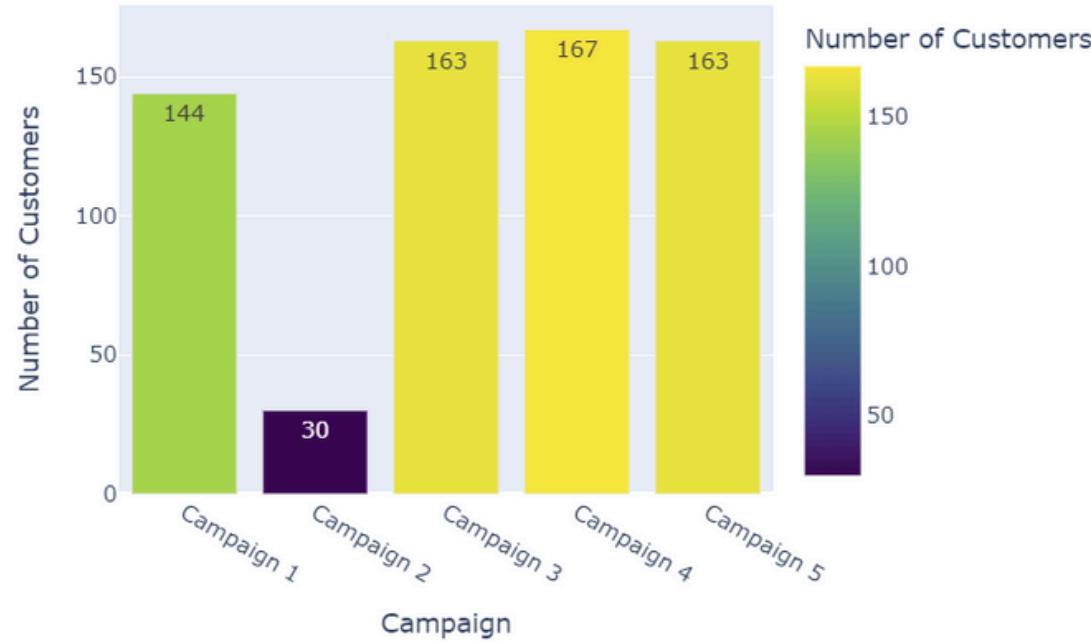
- Customers with no children have the highest purchase volume, especially for Wine and Meat.

## Family Members

- Families with 2 or 3 members make the majority of purchases, again led by Wine and Meat.



# Campaign Analysis



Number of Customers per Campaign:

- Campaigns 1 and 3 to 5 consistently engaged a high number of customers .
- Campaign 2 had significantly fewer participants, indicating lower effectiveness or reach.

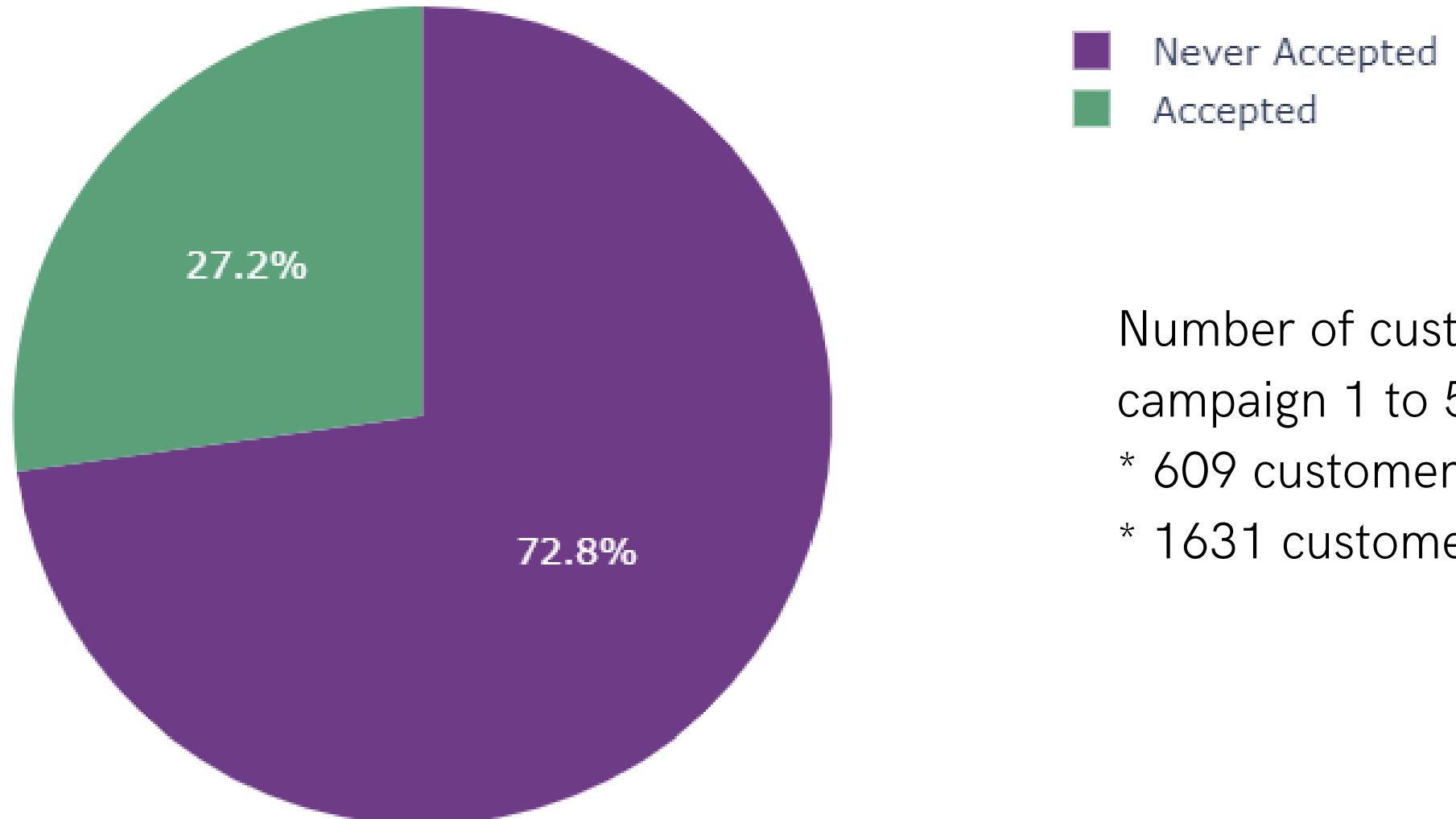
Total Purchases by Sales Channel:

- Store Purchases dominate, followed by Web Purchases and Catalog Purchases.
- This highlights the store as the most preferred channel for purchases.

Avg Total Spent by Total Accepted Campaigns:

- Customers who accepted more campaigns (4 or 5) had the highest average spending.
- Spending gradually increases with the number of accepted campaigns, suggesting that engagement with campaigns correlates with higher spending

# Campaign Acceptance Percentage



Number of customers who have received campaigns from campaign 1 to 5 is :

- \* 609 customers have received the campaign
- \* 1631 customers have not received the campaign

# Recommendations



## Maximizing Product Sales

- Focus on Top Performers:
  - Prioritize Wine and Meat, which dominate sales, by offering exclusive promotions during festive seasons or loyalty programs.
- Boost Underperforming Products:
  - Launch targeted campaigns for Sweet, Fruit, and Fish.
    - Example: Bundle Sweet with seasonal themes (e.g., Halloween).
    - Promote premium Fish like Salmon and Tuna to niche customers.

## Enhancing Customer Engagement

- Target High-Value Segments:
  - Focus on high-income, partnered customers aged 61+ with tailored promotions and product bundles.
  - Encourage spending by offering perks such as free delivery for bulk purchases.
- Expand Younger Demographics:
  - Use digital marketing to attract younger customers (31–50), offering online-exclusive discounts.

# Recommendations



## Improving Campaign Effectiveness

- Increase Campaign Participation:
  - Personalize campaigns to align with customer interests, especially for those who previously accepted campaigns.
  - Offer gamification or reward points to encourage campaign engagement.
- Analyze Campaign Performance:
  - Reassess Campaign 1 to improve reach and content, ensuring it matches the success of other campaigns.

## Optimizing Sales Channels

- Web Purchases:
  - Attract tech-savvy customers with a seamless online experience and discounts for first-time users.
- In-Store Purchases:
  - Maintain dominance by improving store layouts, offering exclusive in-store deals, and enhancing staff training.

# Thank you!

Capstone 2

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