# Grouping Customers to Maximize Campaign Effectiveness
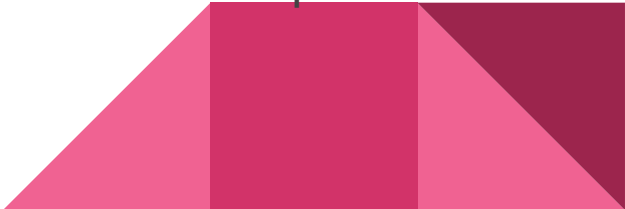
A Data-Driven Approach to Identifying the different customers profiles.

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# Why? Problem Statement

- The marketing department has tasked our data science team with identifying groups of customers based on their characteristics and behaviors.

- The goal is to determine the distinct characteristics of each customer segment,

- enabling the marketing team to design a highly targeted campaign for each customer group.

# Importance of Customer Segmentation

- **Understanding Our Customers**: To design effective marketing strategies, we need a clear picture of who our customers are.

- **Understand Customer Behavior**: Spot patterns in spending, preferences, and engagement.

- **Drive Personalization**: Create tailored campaigns for maximum impact.
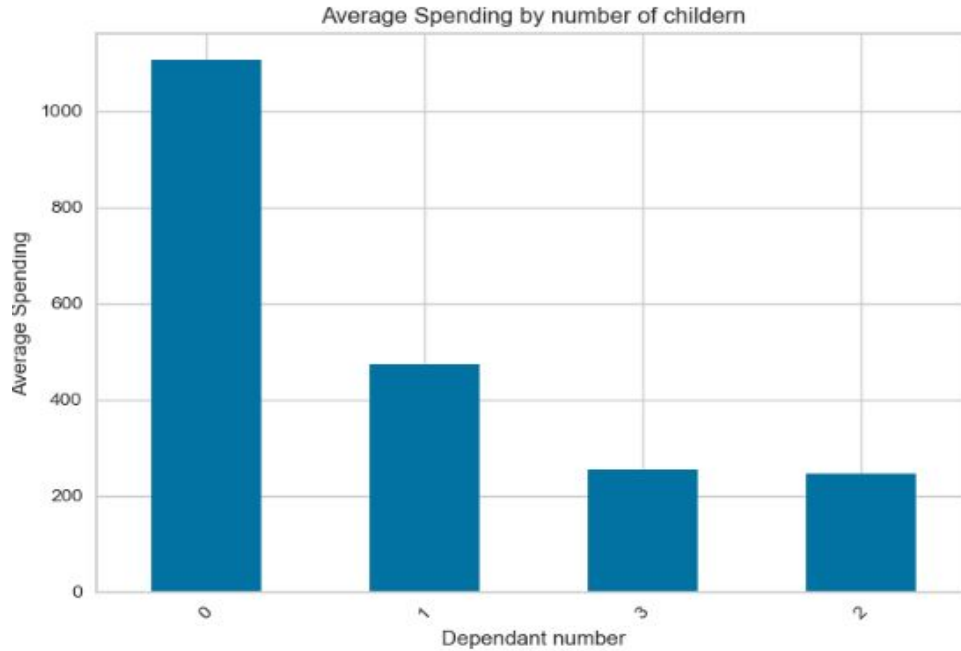
# How Did We Approach This?

- **Data Source:** Customer Personality Analysis dataset from 2012 to 2014 (given from marketing team).
  - 2240 rows
  - 29 features

- **Steps Taken:**
  - Data Cleaning: Removed missing values, handled outliers, normalized numerical features.

  - Exploratory Data Analysis (EDA):
    - Investigated relationships between spending habits, demographics, and income levels.
    - Visualized distributions and correlations.
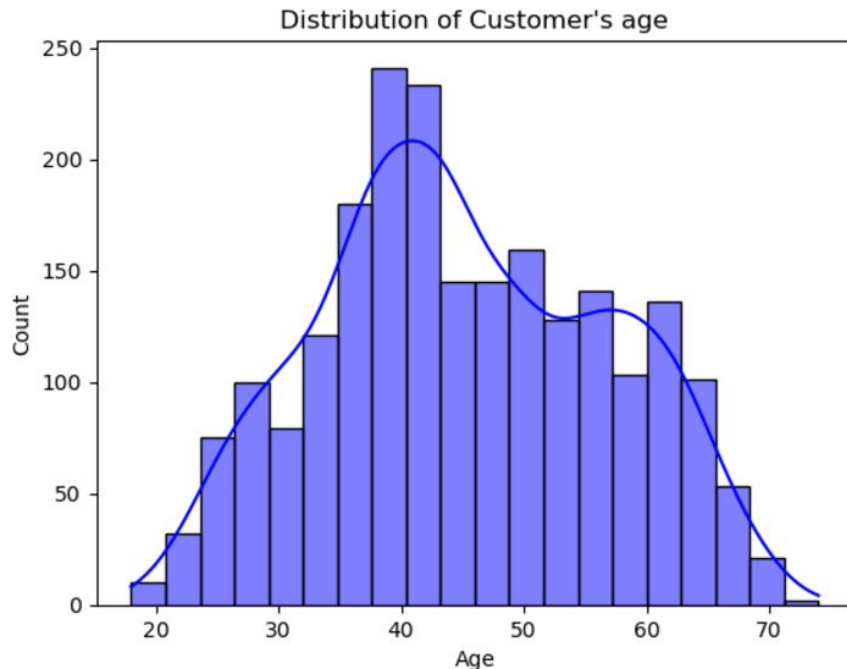    - Feature selection.

# Exploratory Data Analysis Graphs
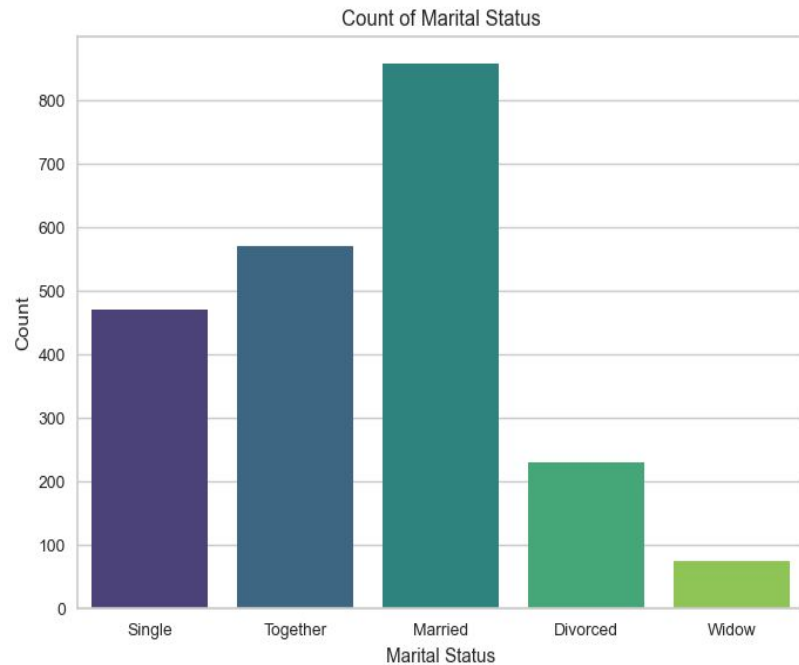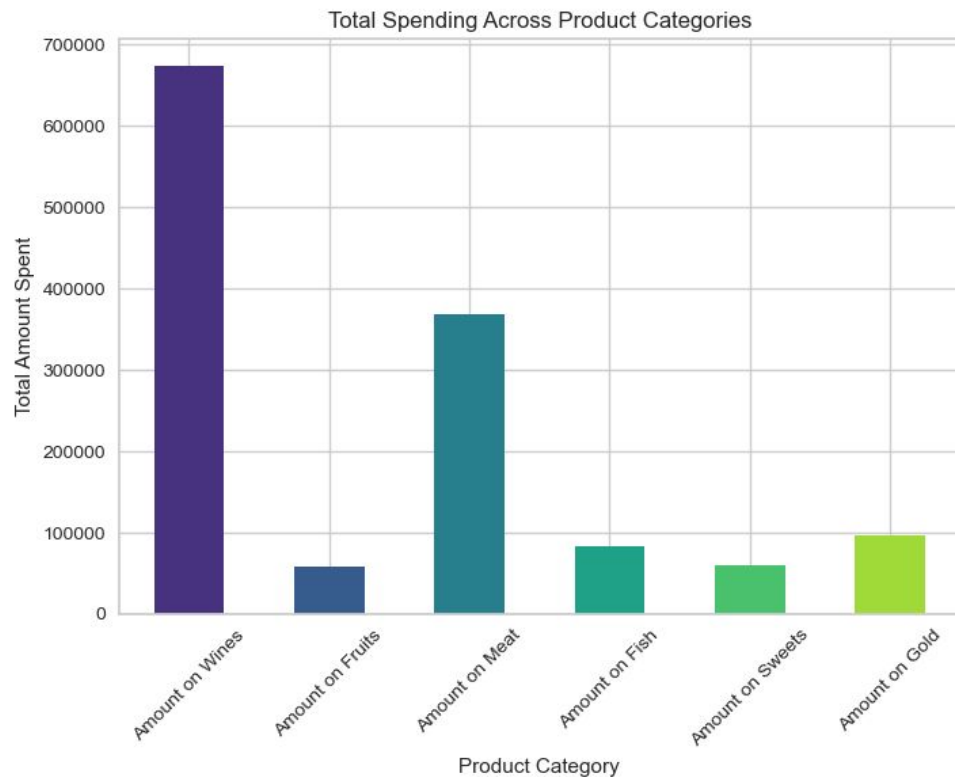
# Exploratory Data Analysis Graphs

# How Did We Approach This?

- Model based on the attributes:

  - **Income**
  - Number of **Children**
  - Age
  - Marital Status
  - Product
  - Engagement in campaigns
  - Education



Distribution of Customer's age

# Choosing the Right Method

- Since it is a clustering problem we tried lots of different methods (more than 10 different algorithms, parameters and features combinations) and concluded that **Kmeans** is our best option.

  - **Scalability**: Efficient for large datasets like ours.
  - **Simplicity**: Easy to interpret and deploy in future analyses.
  - **Performance**: Suitable for identifying well-defined groups.

- How It Works:
  - Divides customers into k clusters based on similarities in features.
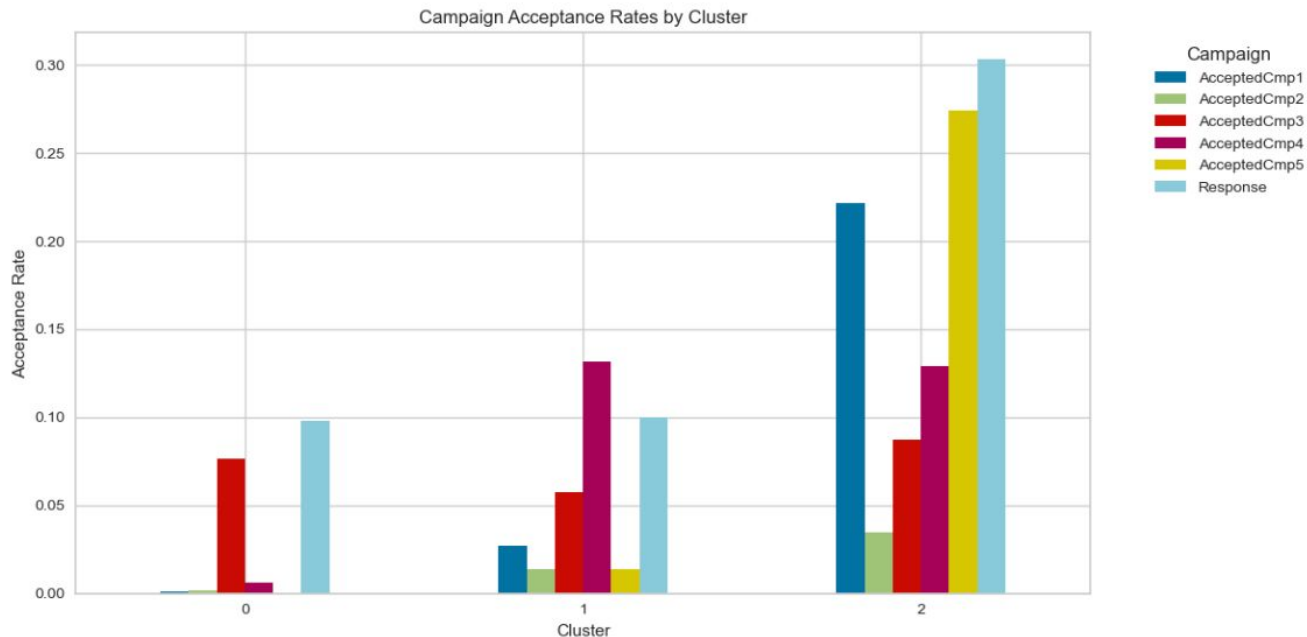  - Each customer belongs to the group closest to their profile.

# What Did We Discover? Results of Clustering

- Clusters profiles:

  - **Cluster 0:** Low income, families with small children
    - 992 customers

  - **Cluster 1**: Medium Income, families with teenagers
    - 662 customers

  - **Cluster 2**: No kids, High Spenders
  - 
    - 551 customers



Total Spending per Customer Cluster
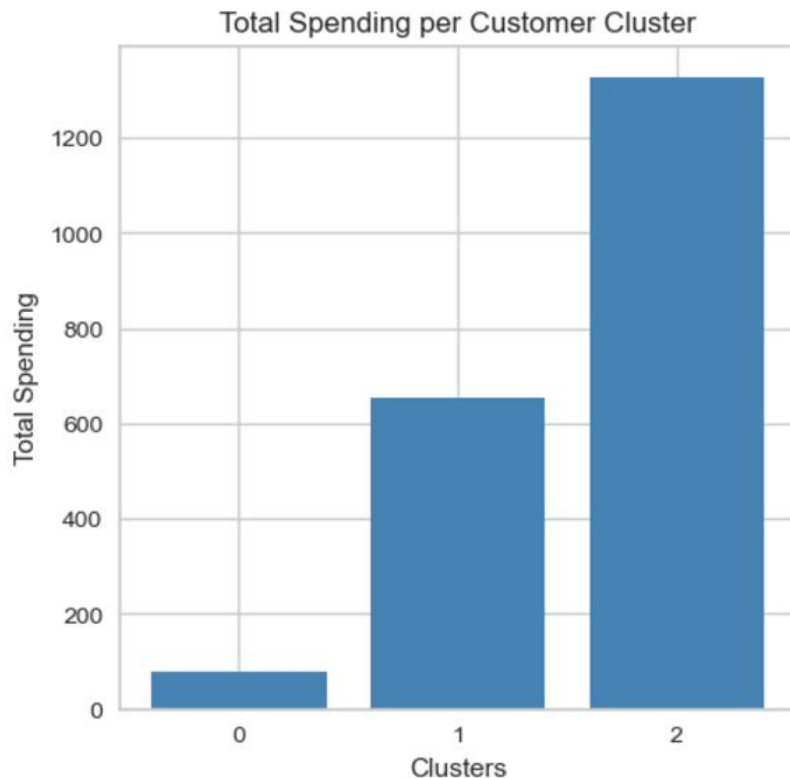
# What Did We Discover? Campaign Feetback



Campaign Acceptance Rates by Cluster

Cluster 2 response rate is much higher.

# Recommended Campaign Strategy - Cluster focused campaigns

**Current strategy**: Generic. Very low conversion.

- 80% of our clients showed zero interest for our campaigns.

**Refined strategy**: Cluster focused.

- Personalized campaigns depending on customer profile, to improve campaign response, increase loyalty and maximize revenue.



Count Of Promotion Accepted
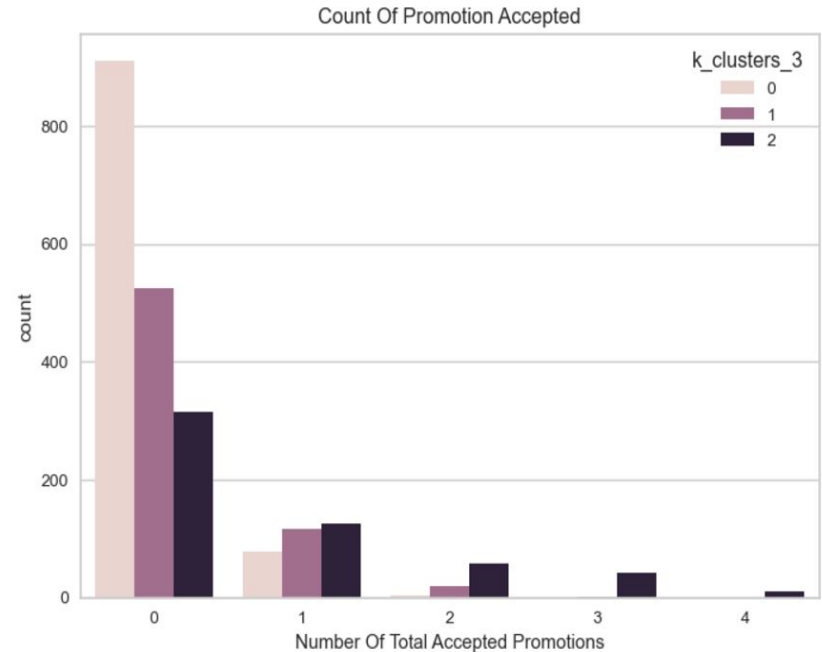
# Next Steps- From Insight to Action

- Actions for Marketing:
  - Evaluate Cluster Performance of targeted marketing campaigns.


- For Data Science Team:
  - Monitor campaign performance and refine segmentation.

Thank you!