Marketing Campaign Analysis

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Introduction

In an age characterized by the digital revolution, understanding customer behavior is not just a competitive advantage—it's a necessity. The convergence of technology and commerce has given businesses unprecedented access to customer data. Every click, every purchase, and every online interaction offers a glimpse into the evolving dynamics of consumer preferences. Yet, while data is abundant, actionable insights are scarce. In a landscape saturated with marketing campaigns, only those businesses that can distinguish signal from noise will thrive.

In an intensely competitive market, understanding customer behavior is pivotal. Our dataset, from a marketing campaign, offers insights into customer demographics, purchases, and interactions. The aim is to analyze this data to:

Identify high-value demographic segments. Gauge the effectiveness of past marketing campaigns. Understand purchase preferences across segments. Predict responsiveness to future campaigns. Through this analysis, we seek to guide the company's future marketing strategies, ensuring increased customer engagement and revenue.

Data Description

- **People**

    - **ID**: Unique customer identifier.
    - **Year_Birth**: Customer's birth year.
    - **Education**: Education level.
    - **Marital_Status**: Marital status.
    - **Income**: Yearly household income.
    - **Kidhome & Teenhome**: Number of children and teenagers in the household, respectively.
    - **Dt_Customer**: Date of enrollment with the company.
    - **Recency**: Days since last purchase.
    - **Complain**: Indicator (1 or 0) if the customer complained in the last 2 years.

- **Products**

    - **Mnt{Product}**: Amount spent on various products (e.g., Wines, Fruits) in the last 2 years.

- **Promotion**

    - **NumDealsPurchases**: Purchases made with a discount.
    - **AcceptedCmp{i}**: Indicator (1 or 0) if the offer was accepted in the ith campaign.
    - **Response**: Indicator (1 or 0) for the last campaign response.

- **Place**

    - **Num{Source}Purchases**: Purchases made through various channels (e.g., Web, Catalog, Store).
    - **NumWebVisitsMonth**: Website visits in the last month.
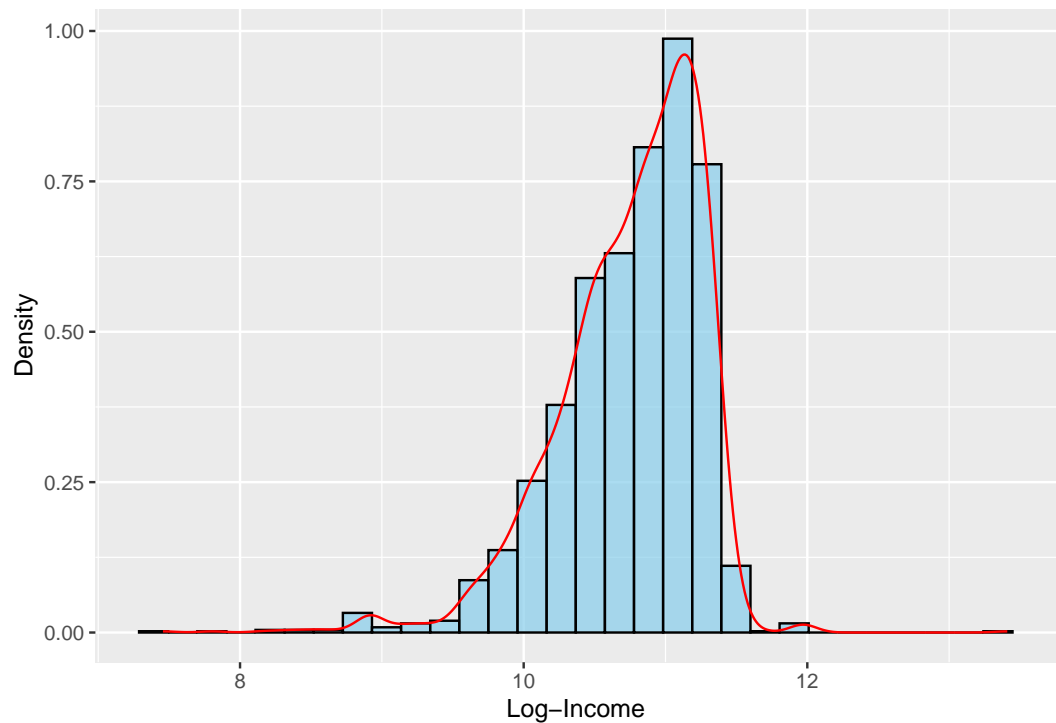
Exploratory Data Analysis

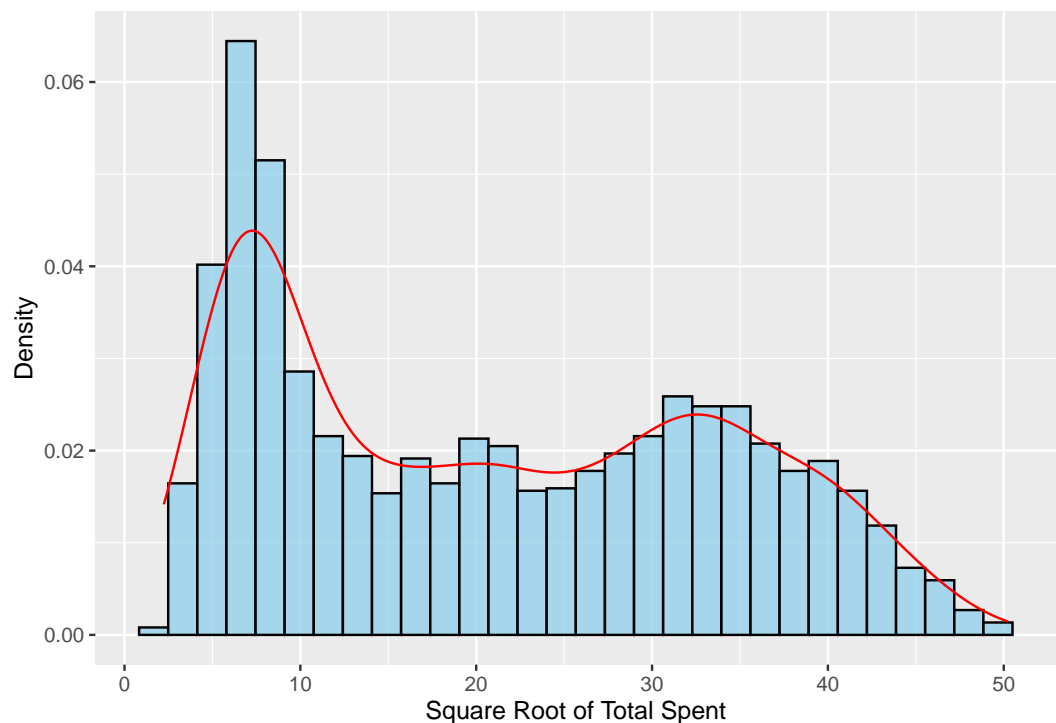## Distribution of Customer Demographics

Age Distribution

Calculating the age of each customer based on their year of birth and then plot a histogram. We assume the current year to be 2015 since the last date recorded in the data is '29-06-2014'
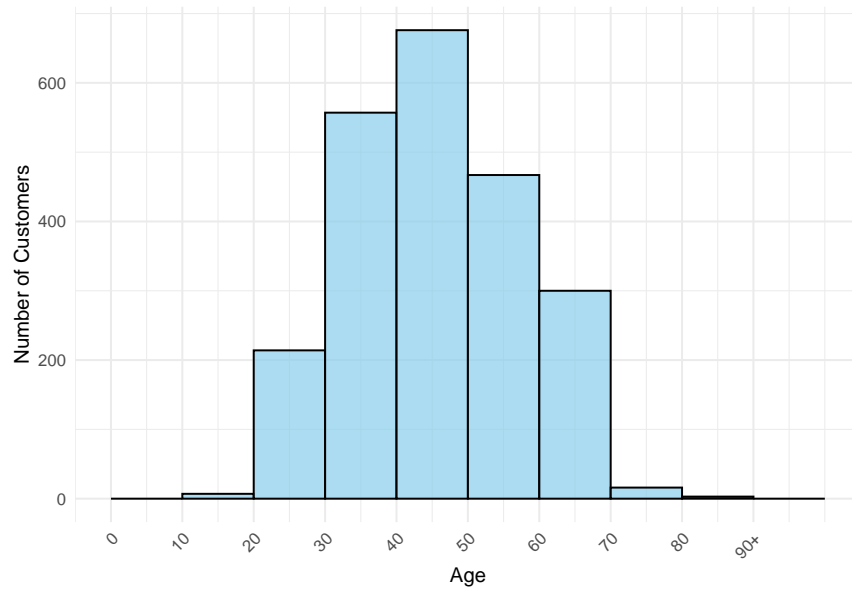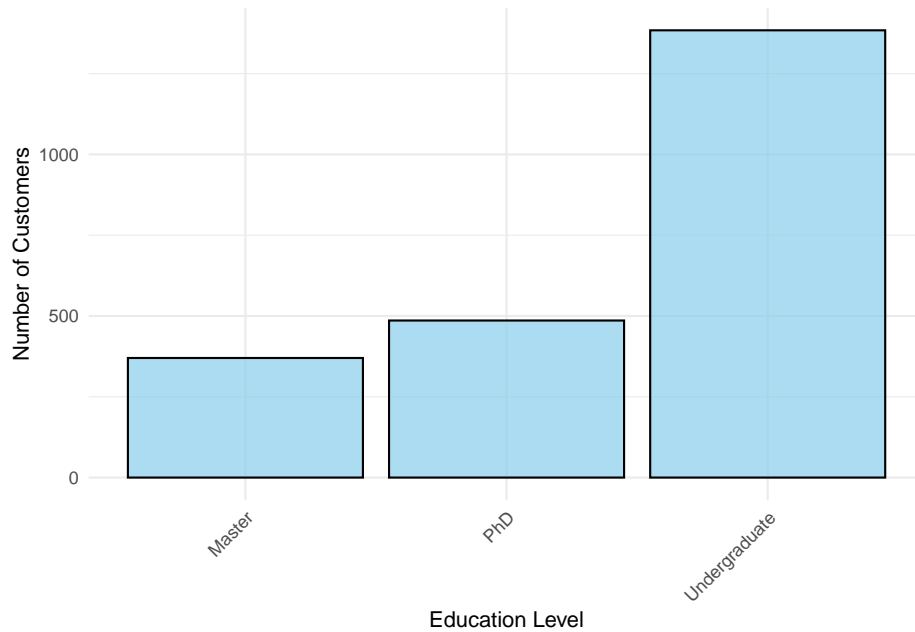
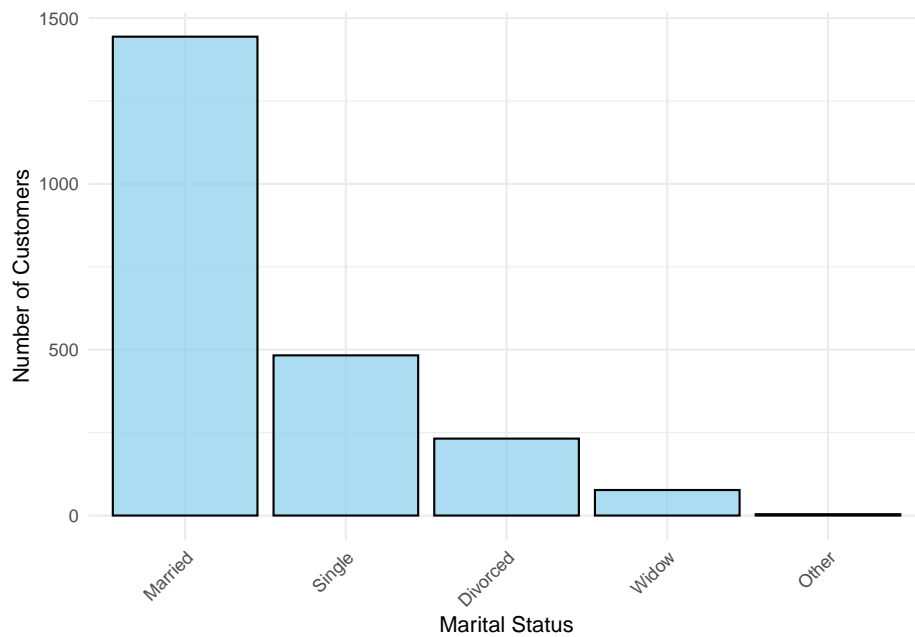**Log-Income Distribution**

Square Root of Total Spent Distribution

Education Distribution

Grouping the values "2n Cycle","Basic","Graduation" to "Undergraduate" and plotting the distribution of the customers
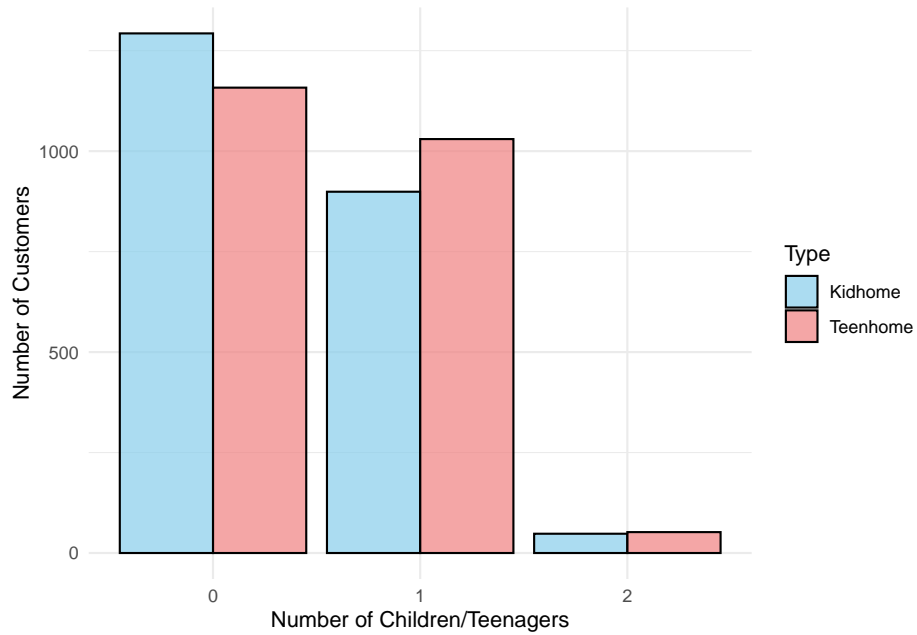

Marital Status Distribution

Assuming 'Alone' to be 'Single' and 'Together' to be 'Married'. Different values such as 'Absurd' and 'YOLO' are grouped under 'Others'
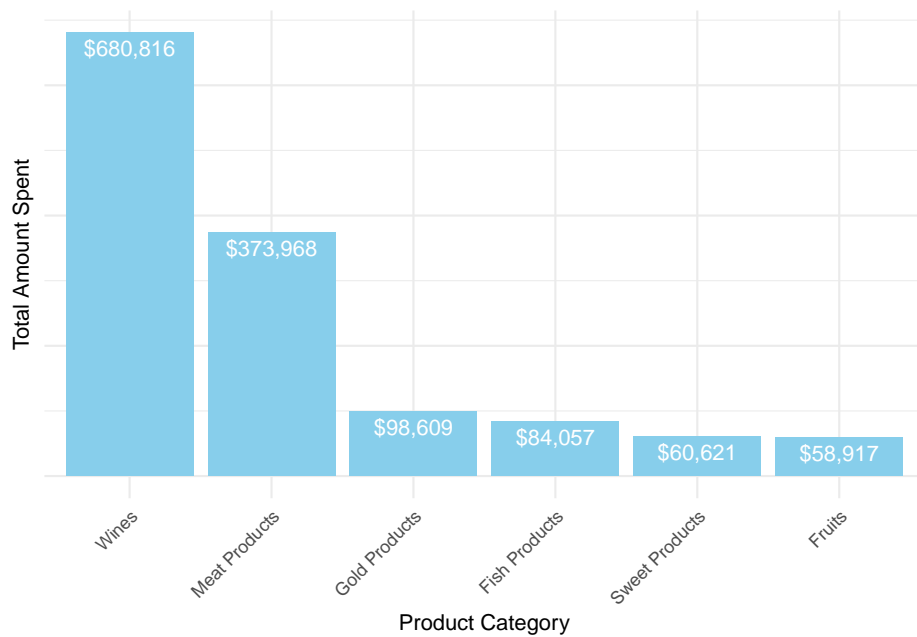
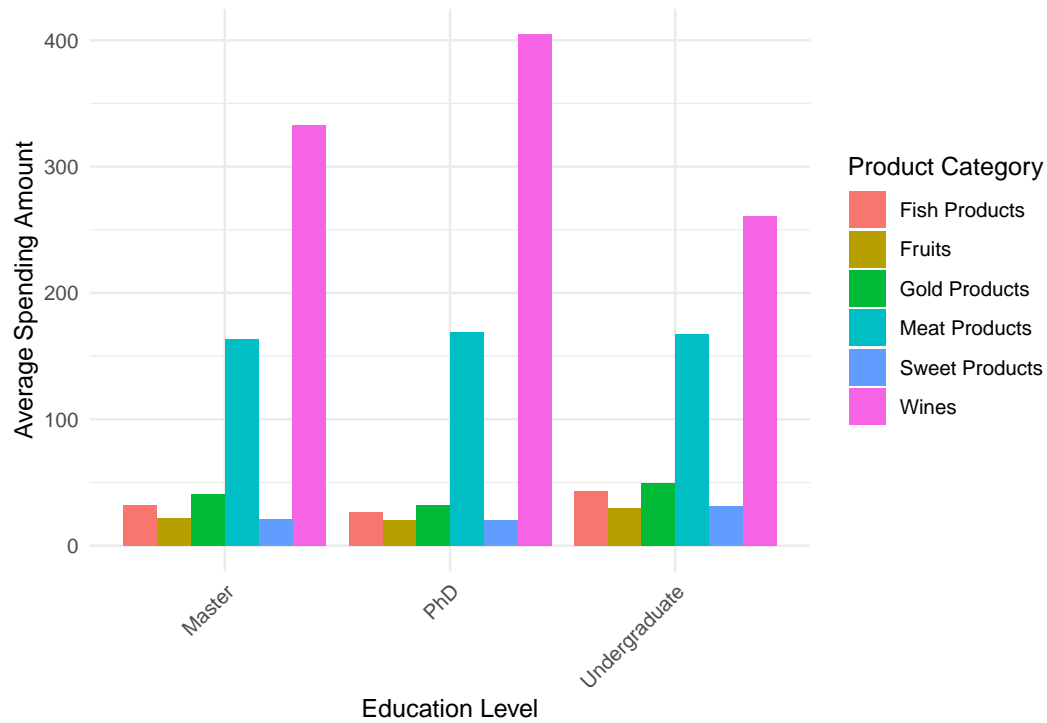**Distribution of Customers by Number of Children and Teenagers at Home**

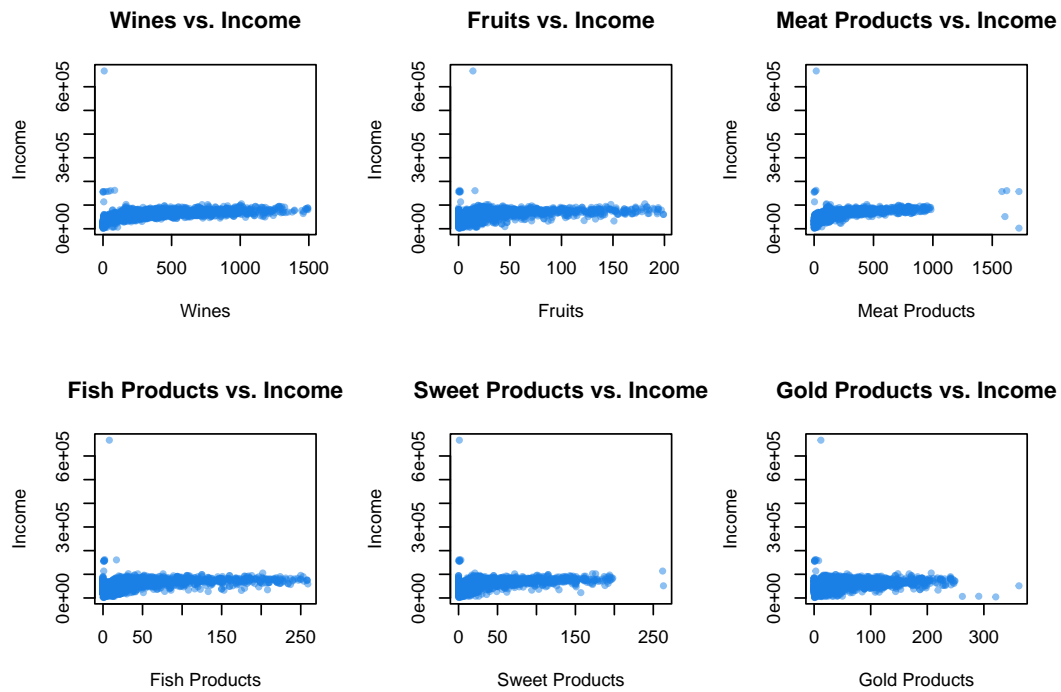## Spending Analysis

Total Spent Across Products

To understand where most of the money is being spent, we'll begin by visualizing the total spending across different product categories.
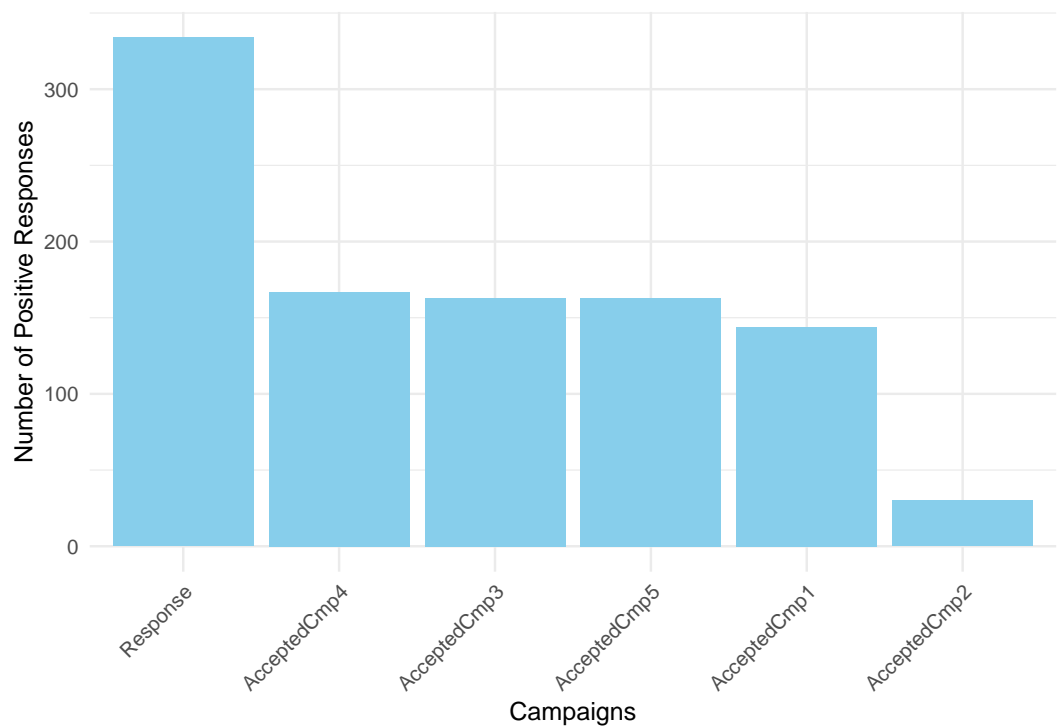
Average Spending by Education

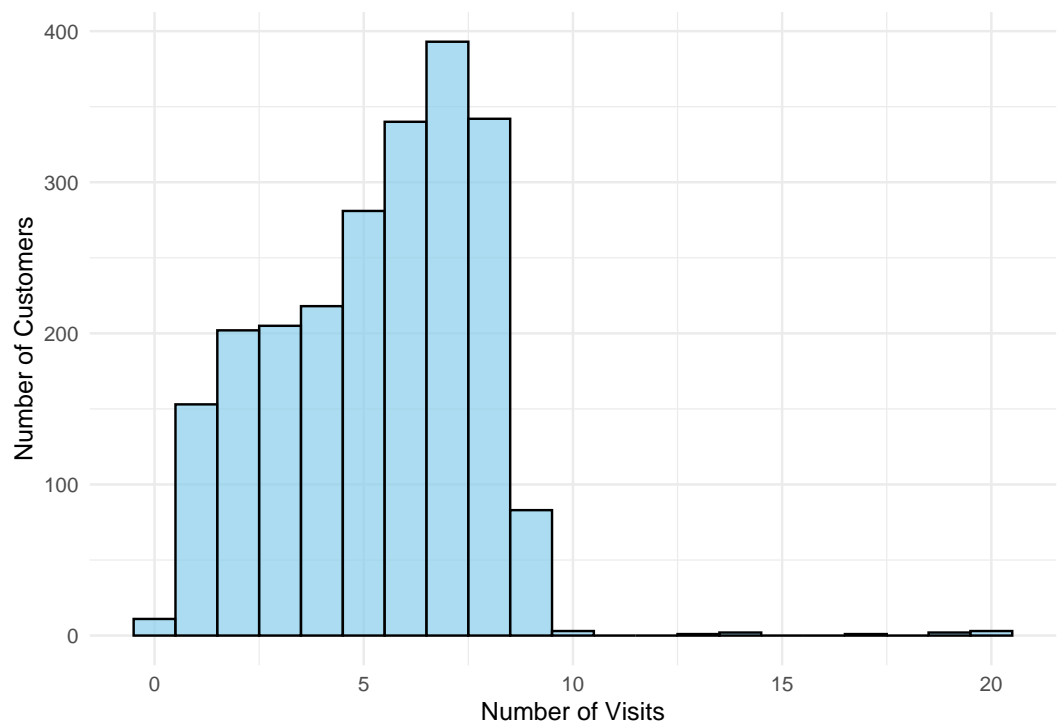## Relationship Between Income and Spending

Customer Engagement Analysis

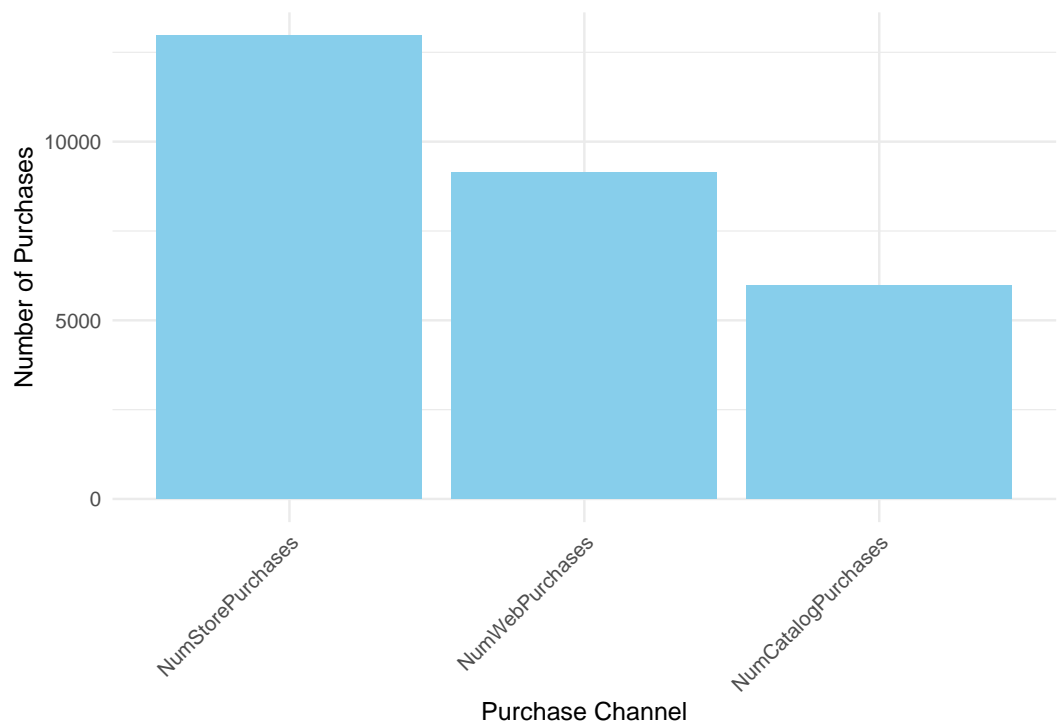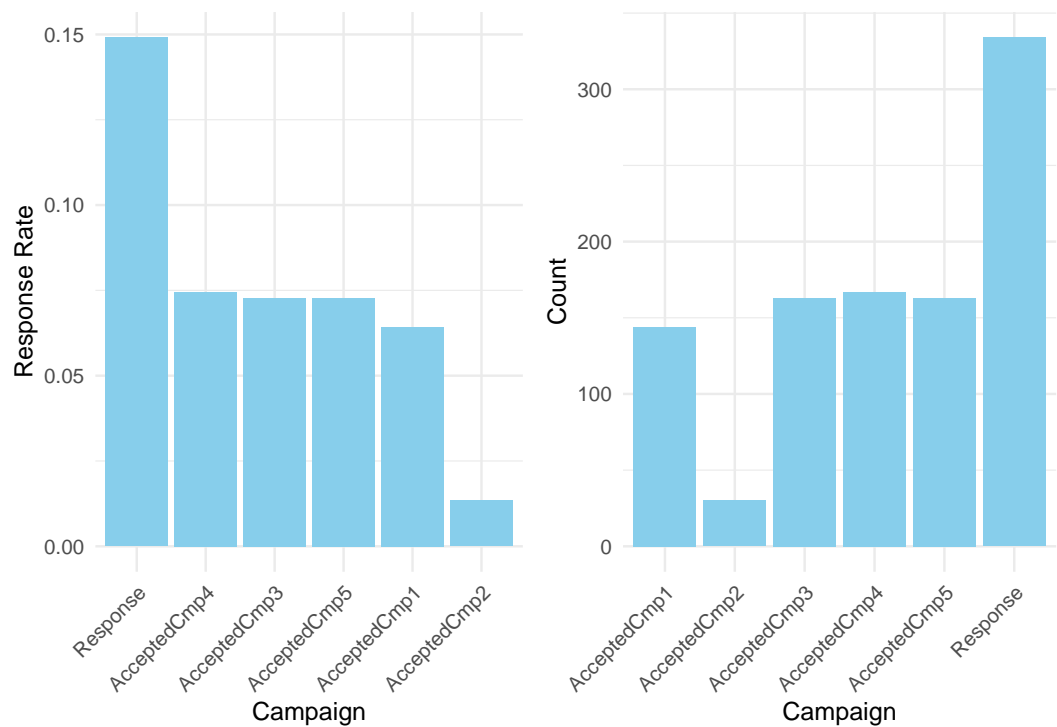## Engagement by Response to Campaigns

Engagement by Website Visits

Engagement by Purchase Channels
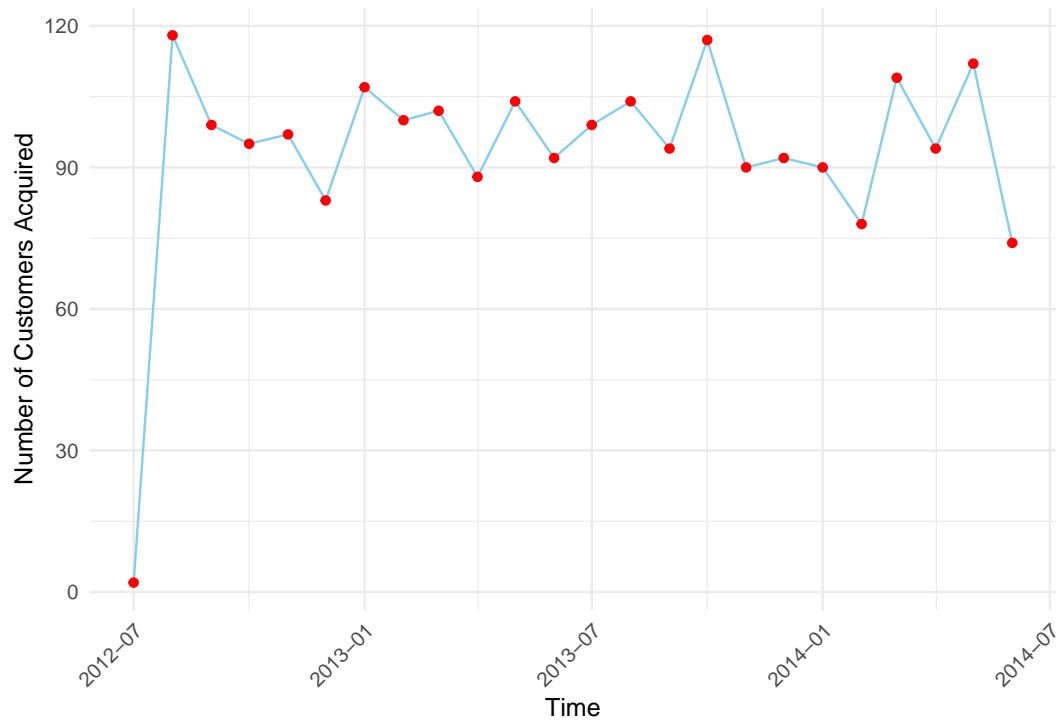

Response Analysis
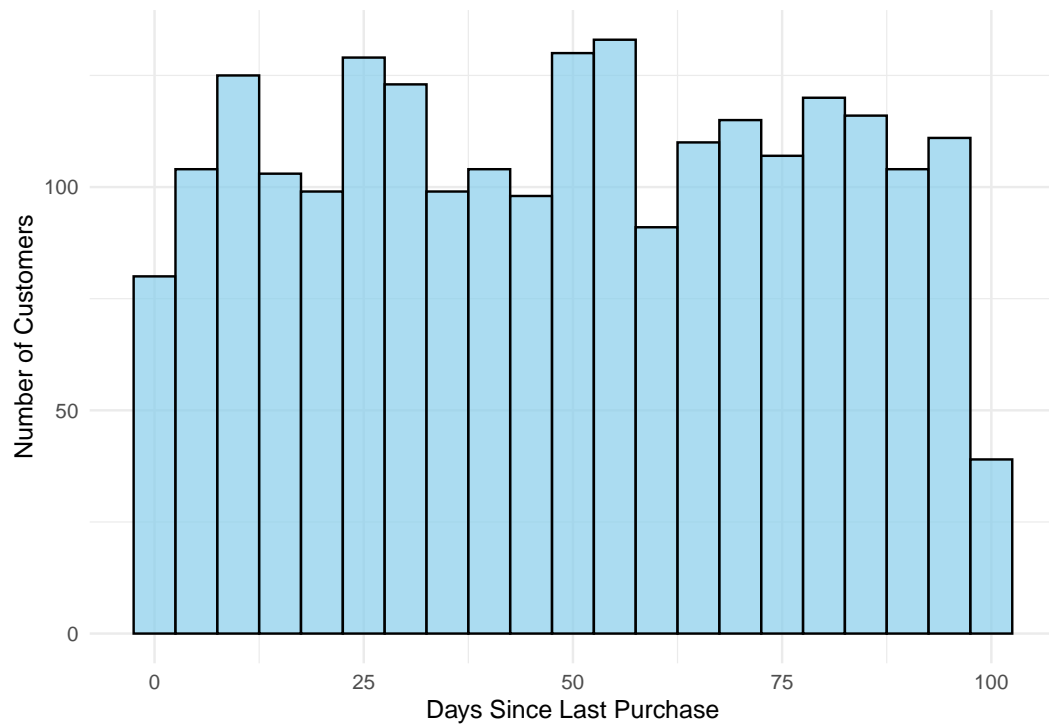
Overall Campaign Effectiveness

Time Analysis

Customer Acquisition Over Time

Recency Distribution

Results

- **Demographics**: The majority of our customers are middle-aged, specifically between 40 to 60 years. This suggests that our marketing campaigns resonate well with this age group. Furthermore, most of our customers earn between $20,000 and $80,000 annually, indicating a broad middle-income client base.

- **Education and Family**: A notable portion of our clientele have pursued undergraduate studies, followed by those holding PhDs and master's degrees. Interestingly, many of our customers are married without children at home. This demographic insight may be crucial for tailoring future campaigns.

- **Spending Patterns**: The primary product driving sales is wine, indicating its popularity or perhaps its higher price point. However, it's essential to note that income doesn't directly correlate with spending on other products, suggesting diverse purchase preferences across income groups.

- **Campaign Responses**: The final campaign saw a substantial response, indicating its effectiveness. The primary channel for these responses was store purchases, suggesting the importance of physical outlets in our marketing strategy.

- **Engagement Over Time**: Customer acquisition has remained consistent over time, and the frequency of visits peaks at 8 times a month. This consistency offers a stable customer base but also indicates room for growth.

- **Recency Analysis**: The uniform distribution of customers against days since the last purchase can be instrumental in segmenting our audience for targeted campaigns. By understanding the frequency of customer purchases, we can tailor our outreach more effectively.

Conclusion

Our data reveals a targeted demographic primarily within the middle-aged bracket, emphasizing a potential focus on mature, educated, and possibly career-oriented individuals. The consistent customer acquisition, paired with the dominance of wine in product preferences, suggests our campaigns have resonated well with this audience. However, the uniform behavior in terms of purchase recency indicates an opportunity to diversify our approach, potentially targeting varied engagement rhythms. The strong in-store purchase response underscores the importance of our physical outlets, but also hints at exploring more integrated online-offline campaign strategies. As we move forward, leveraging these insights will be pivotal in refining our marketing approach, ensuring we not only maintain our current customer base but also explore avenues for growth and enhanced engagement.