Customer Analysis and Churn Prediction

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Introduction

- Customer Churn prediction means knowing which customers are likely to leave or unsubscribe from your service. For many companies, this is an important prediction. This is because acquiring new customers often costs more than retaining existing ones.

- Customers have different behaviors, preferences, and reasons for canceling their subscriptions. Therefore, it is important to actively communicate with each of them to keep them on your customer list.

Agenda

- We propose a model, abbreviated as RFMOC, based on an extension of recency frequency, monetary (RFM) analysis with two new variables to segment customers.
- Moreover, customer lifetime value (CLV) is calculated for the weighted RFMOC with weights for variables calculated by the analytic hierarchy process (AHP), and customer segments are then ranked accordingly which helps to create targeted marketing strategies.
- At last, the customer churn prediction is performed using logistic regression by further extending the RFMOC with one more variable, abbreviated as RFMOCD, in order to predict the churning behavior of the customers.

Problem Statement

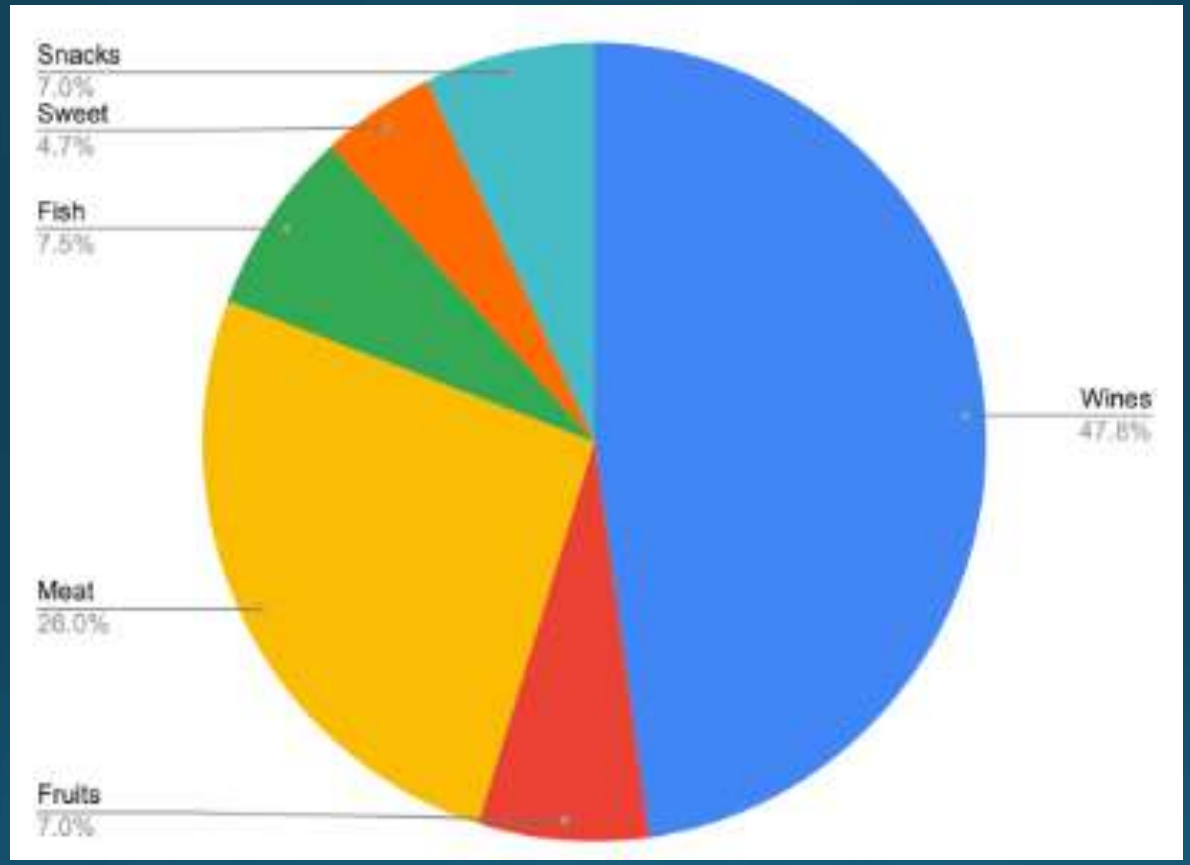
1. Customer Segmentation

- It is the process of dividing a customer base into distinct groups of individuals that have similar characteristics. This process makes it easier to target specific groups of customers with tailored products, services, and marketing strategies.

- Retailkart.com is a small and medium-scale organization that majorly deals in wine, fruit, and meat products, having held around 35% market share. The company has been leading the domain offline for a long time.

- The critical problem for retailkart.com is to stay competitive. Competing with rapidly expanding companies offering quick and free deliveries while still accepting online purchases at affordable costs is challenging. As a result, the company is losing market share, and customer behavior patterns are also changing.

- For its current consumers, retailkart.com has launched a consumer behavior study survey through a third-party survey company. According to the survey's findings, retailkart.com recently decided to enter the online market because customers' behavior is changing. The company now favors online quick delivery for the customers' daily needs.



The picture shows the category-wise sales share for the organization including online and offline transactions.

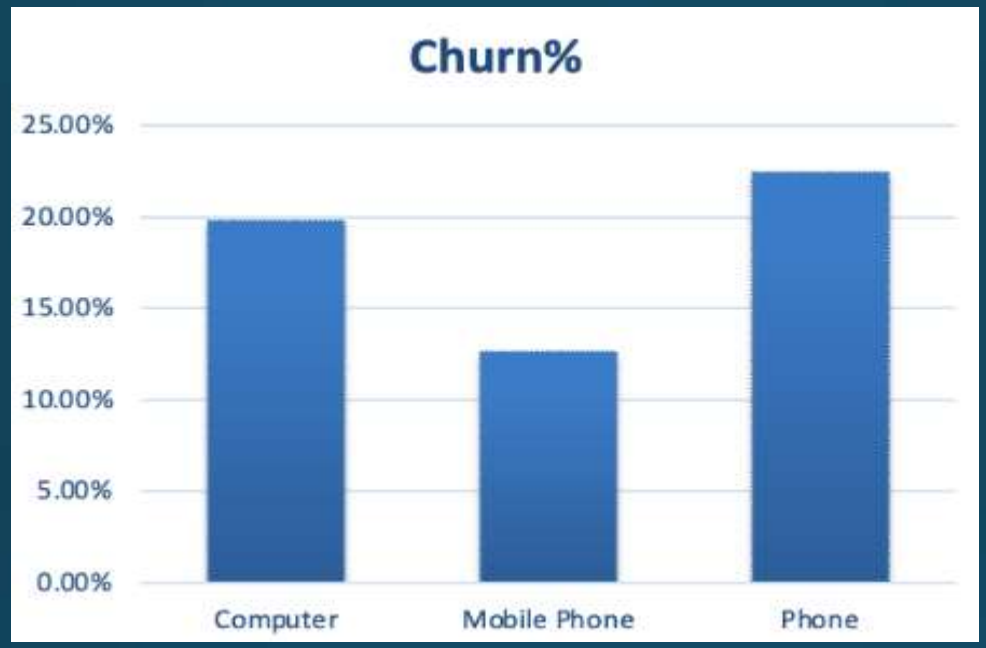
- The company’s near-term objective is to maintain its overall market share, with the increasing competition offering 10-minute delivery, among other benefits. However, it has become critical for the company to retain its existing customers and drive growth on the platform.

- Growth on the platform can be driven by increasing conversion rates and purchase frequency for existing offline customers by moving them to the online space and offering a better-personalized experience.

- More than six months into launching the platform online, the company is trying to develop better ideas to retain existing customers and stop them from opting out.

2. Churn Prediction

A customer moving out of the platform or someone who stops using the platform is considered a churned-out customer. If there is no transaction from a customer for a specific period, it is assumed that they have moved out of the platform; however, this time window may vary from industry to industry, e.g., for a grocery firm, this window could be small, ~1 month. On the other hand, for an e-commerce firm with multiple categories, for example, it could be ~6 months for Flipkart/Amazon. For retailkart.com, this period is 3 months.



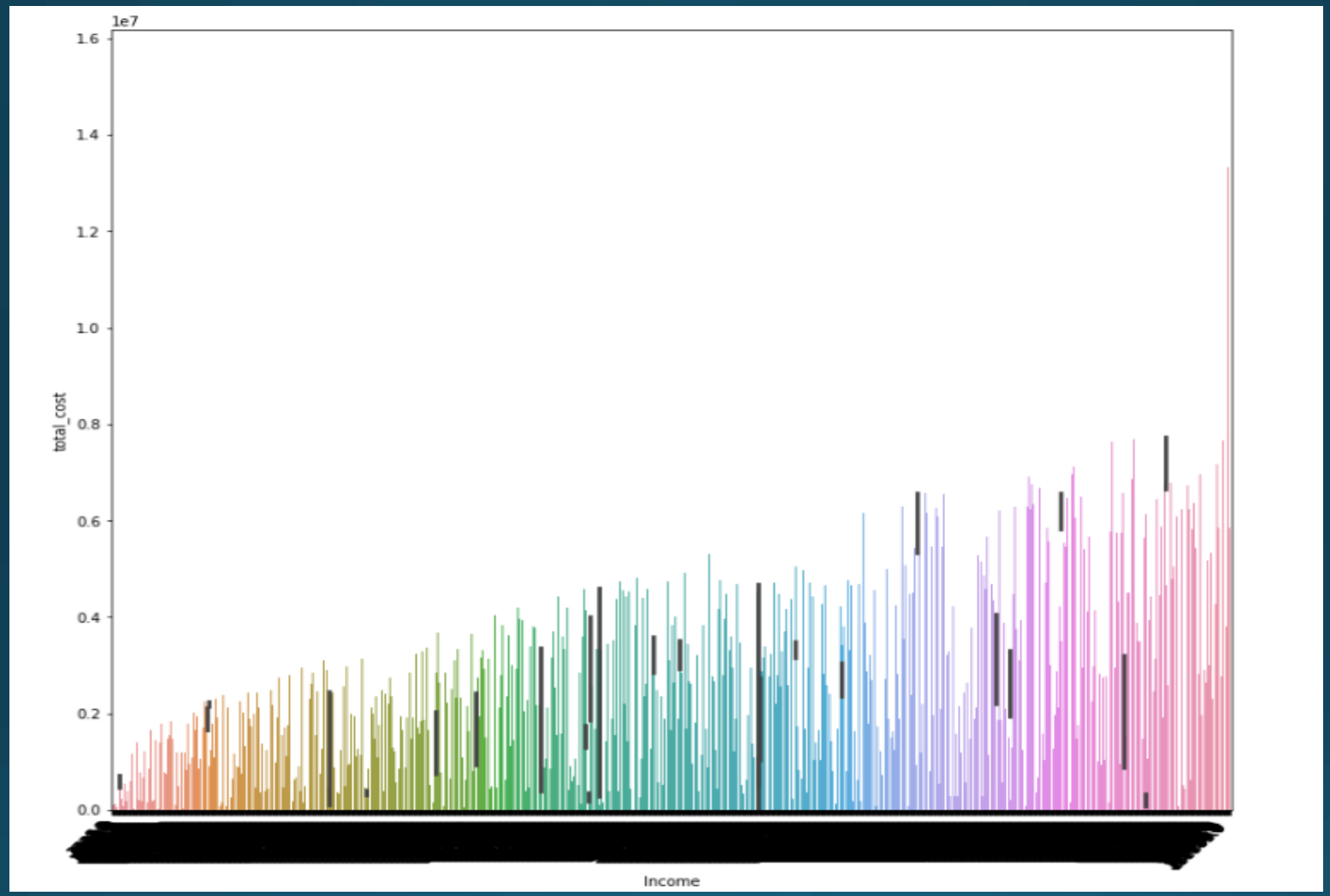
(*Mobile Phone refers to App, whereas Phone is where people have the flexibility to call and make an order)

Moreover, a high (17%) churn rate (customers leaving the platform) has been observed. To prevent this, the company may offer customers a gift ticket worth ₹200 as a gesture of gratitude. However, the company would first need to identify the customers who are most likely to leave.

Exploratory Data Analysis

During EDA, we performed various tasks, including:

- Data cleaning: Handle missing values, remove duplicates, and deal with outliers.
- Summary statistics: Calculate measures like mean, median, standard deviation, and correlation coefficients to understand the central tendencies and relationships between variables.
- Data visualization: Create plots, charts, and graphs to visualize the data distribution, relationships, and trends.
- Hypothesis testing: Test statistical hypotheses to validate assumptions and draw meaningful conclusions.
- Feature selection: Identify the most relevant features or variables that contribute significantly to the target variable.
- Data transformation: Apply transformations like normalization or scaling to ensure data is suitable for modeling.



The total_cost comes out to be more than 85000