# Neptune Research
Amazon Consumer Behavior

Executive Summary

Our analysis reveals that Amazon's purchasing activity is predominantly driven by female consumers, with notable engagement among young women aged 20-30. Early middle-aged women (33-48) also represent a significant segment.

Purchase frequency trends indicate that most customers either shop multiple times per week or limit their purchases to once per month. Interestingly, the proportion of consumers making purchases a few times per month is relatively small, suggesting the presence of a potentially malleable group of mid-frequency shoppers who could be influenced toward increased spending behavior.

Age Distribution of Consumers by Gender
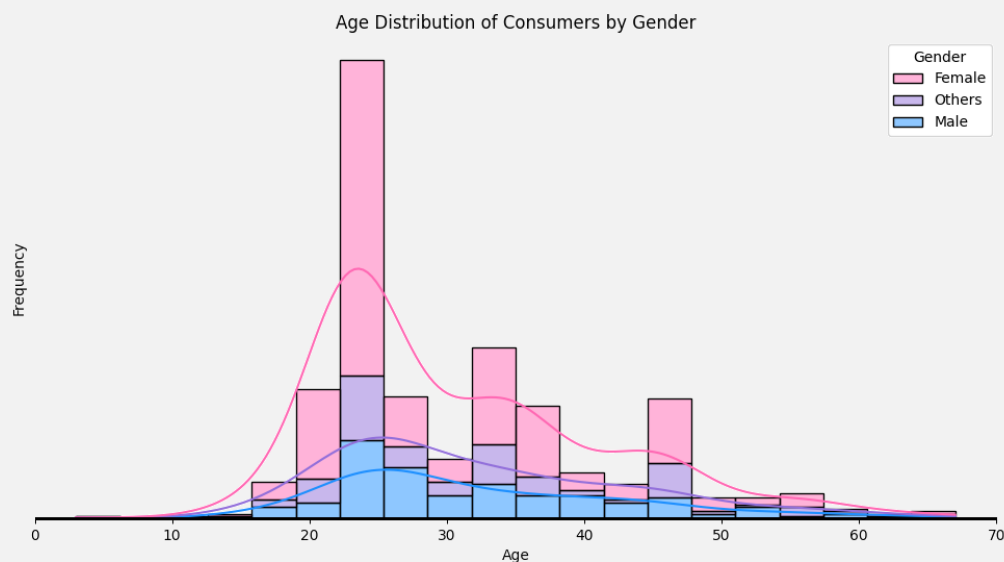
## Young Women as Key Drivers of Amazon's Consumer Base

Our analysis finds significant contribution from young women (ages 20-30) to Amazon's consumer base. As shown in the chart above, this demographic forms the largest cohort across all age groups, with female consumers in this range accounting for the highest frequency of respondents.

The behavior of this group is valuable for Amazon's growth strategies. Young women tend to engage often with the platform, making frequent purchases and exploring product categories with high impulse purchase rates. This presents an opportunity for targeted marketing campaigns, personalized recommendations, and loyalty programs that could further enhance their spending frequency and retention.

This demographic is also often associated with early adoption of trends, and building long-term brand loyalty within this group could yield sustained benefits. Capitalizing on their key preferences—such as competitive pricing and customer service responsiveness—will be critical to maintaining their engagement and encouraging higher spending over time.

Bridging the Gap: Activating Occasional Shoppers

The chart to the right illustrates the distribution of purchase frequency across various consumer segments. While high-frequency shoppers (multiple times per day or week) are clearly dominant, there is a noticeable "valley" in the frequency category of a few purchases per month. This middle group, consisting of consumers who are neither casual nor frequent shoppers, represents an opportunity for growth if targeted effectively.
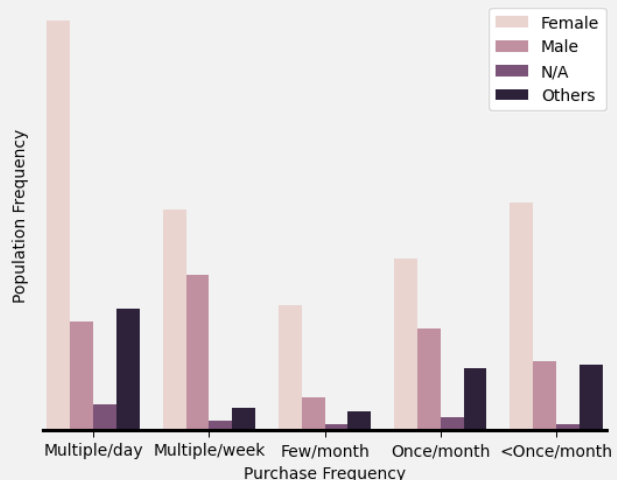
Currently, these "few/month" shoppers are at risk of dispersing into lower engagement categories, such as once a month or less than once a month. Allowing these consumers to drift toward infrequent purchasing could reduce their lifetime value to Amazon. However, through tailored strategies, this group could be nudged upward into the multiple/week category, increasing both revenue and engagement. To activate this portion of the consumer base, Amazon should explore:

- **Incentives for Repeat Purchases**: Introduce personalized discounts specifically targeted towards shoppers in the "few times per month" band.
- **Provide Subscription Incentive**: Provide strong incentives to stay subscribed to Amazon Prime for periods of 2-3 months to drive engagement.
- **Personalized Recommendations**: We constructed a correlation heatmap in our analysis, finding consumer shopping satisfaction to be highly correlated with the frequency of personalized recommendations while browsing.

Methodology

We derived correlation matrices for existing data and used scikit's built-in label encoders to clean the data for visualization. We deployed scikit's feature selection to choose features of the data for one-way ANOVA testing. We fitted various classification models to the data, including KNN, SVC, Gaussian NB, and Random Forest. Gaussian NB yielded the best fit for the smallest computational load in our testing.