

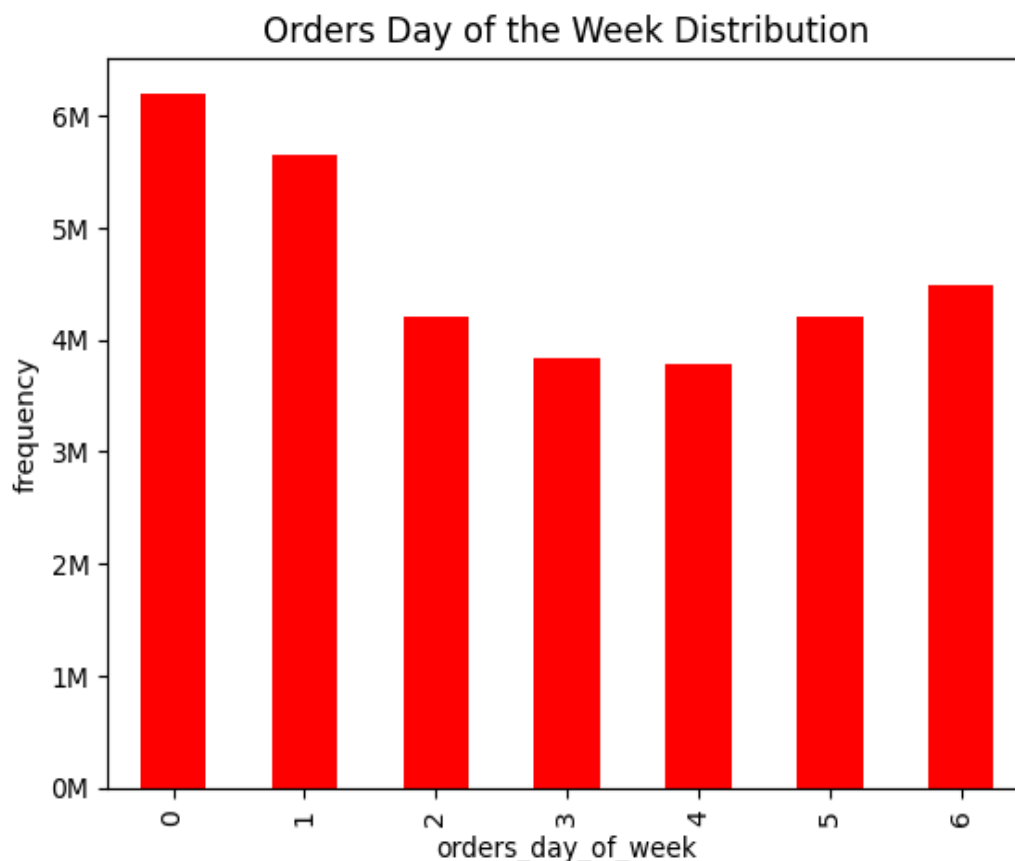
# Instacart Visualizations and Recommendations

## Customer Habits

The sales team needs to know what the busiest days of the week and hours of the day are (i.e., the days and times with the most orders) in order to schedule ads at times when there are fewer orders.

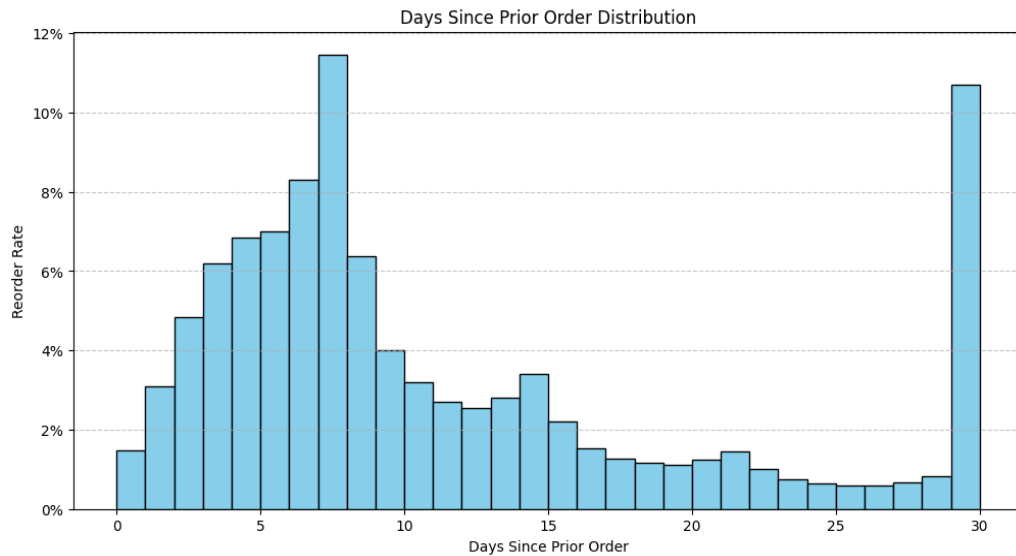
They also want to know whether there are particular times of the day when people spend the most money, as this might inform the type of products they advertise at these times.

### What are the busiest days of the week?



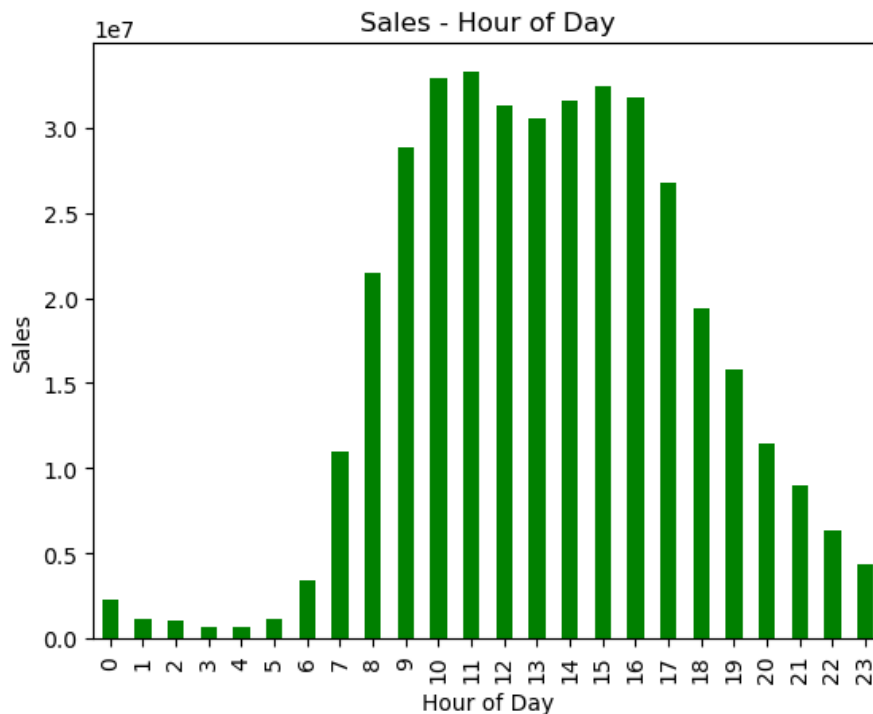
The chart shows that Sunday and Monday have the highest number of orders, with about 6 million orders each. This could indicate that customers prefer to order online groceries on these days, as they may have more time, more planning, or more needs for the upcoming week. There is a significant drop in orders on day 2, with about 3 million orders. The number of orders remains relatively stable from day 2 to day 4, while the number of orders increase again on Friday.

## How often do our customers return to Instacart?



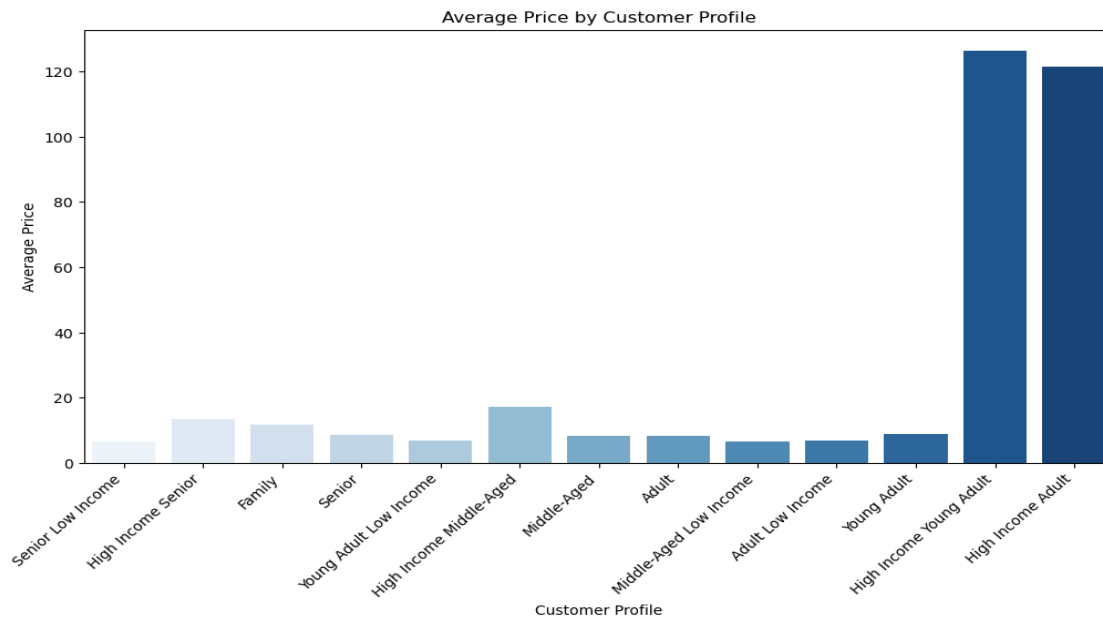
The chart shows that the most common interval is around 7 days, suggesting that many customers place orders weekly. There is another noticeable peak at 30 days, indicating a significant number of customers who place orders monthly.

## When is the busiest hour of the day?



According to the chart the busiest hours are usually between 9:00am to 17:00pm. The slowest hours of the day is between 18:00pm until 8:00am.

## Which income and age group spend the most?



The chart suggests that customers that are young adults with higher incomes tend to buy more expensive products from Instacart, while customers that skew towards more seniors with lower incomes tend to buy cheaper products.

## Which brand loyalty place the most number of orders?

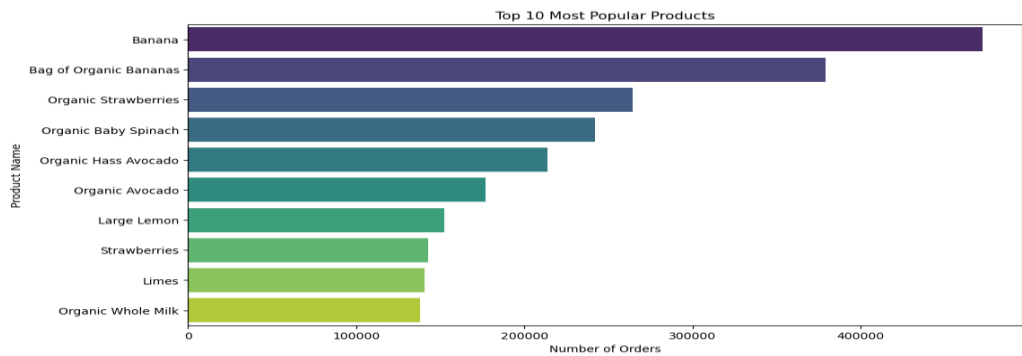


The chart shows that regular customers place the most orders, followed by loyal customers, and new customers place the fewest orders. This could indicate that Instacart has a high customer retention rate and a loyal customer base. The chart also shows that there is a large gap between the number of regular customers and the number of loyal customers.

## Products and departments

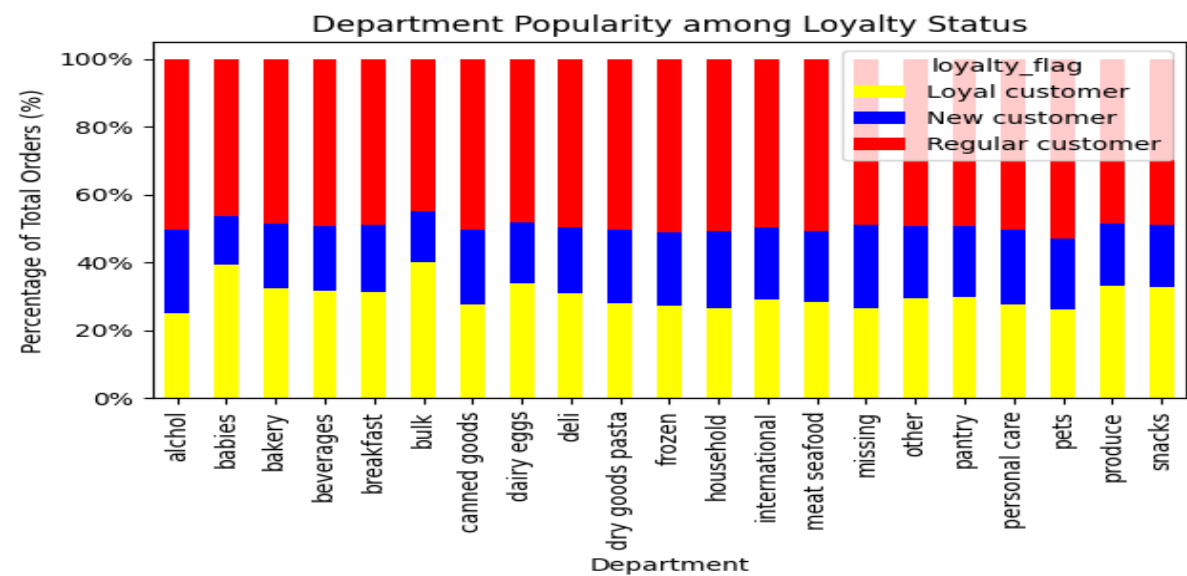
Are there certain types of products that are more popular than others? The marketing and sales teams want to know which departments have the highest frequency of product orders.

### What are the most popular products?



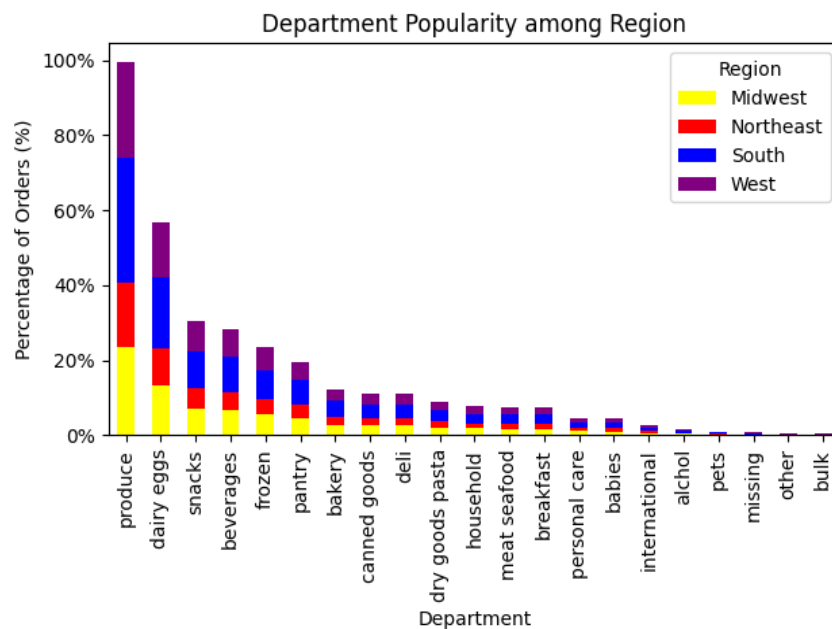
The chart shows that bananas are the most popular product, followed by a bag of organic bananas and organic strawberries. This could indicate that customers prefer fresh and healthy products, or that these products have a high turnover rate and need to be reordered frequently.

### Which are the most popular departments among loyalty status?



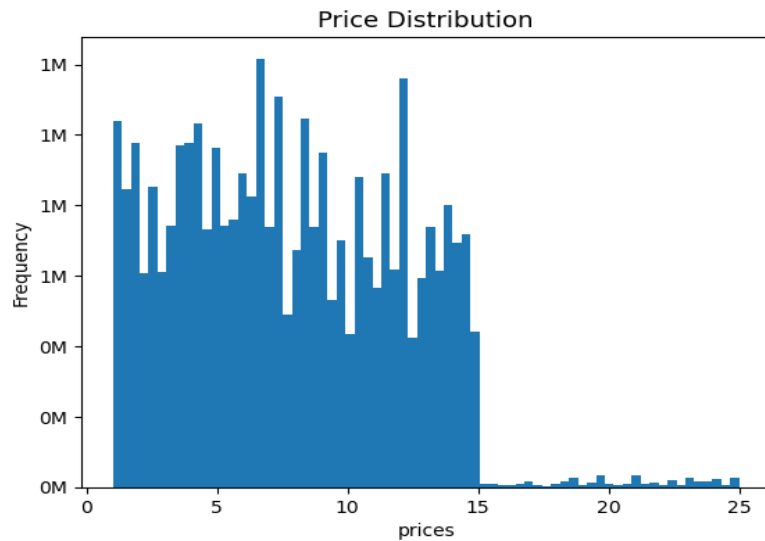
Various departments are popular with different loyalty statuses. Bulk and babies department are more popular with loyalty flag than other departments while pets, alcohol, household, frozen dry goods pasta, and canned foods remain relatively similar among loyalty flag. For new customers babies and bulk remain in the lowest proportions. While missing and Alcohol remain the biggest proportions among new customers. Regular customers highest orders are in pets, breakfast, beverages, bakery, alcohol, meat and seafood, and canned goods. Reason as to why Alcohol remains popular among new customers is because some people want specific brands and Instacart most likely has the brand they're looking for at a good price. Thus they may not be a regular or loyal customer is perhaps they shop at other stores and they can only purchase specific alcohol through Instacart.

## Which are the most popular departments among regions?



The chart shows that the produce department is the most popular among all regions, with the Southern region having the highest number of orders, followed by the West, the Midwest, and the Northeast. The chart also shows that the dairy eggs and beverages departments are also popular but to a lesser extent. Bulk category remains relatively low.

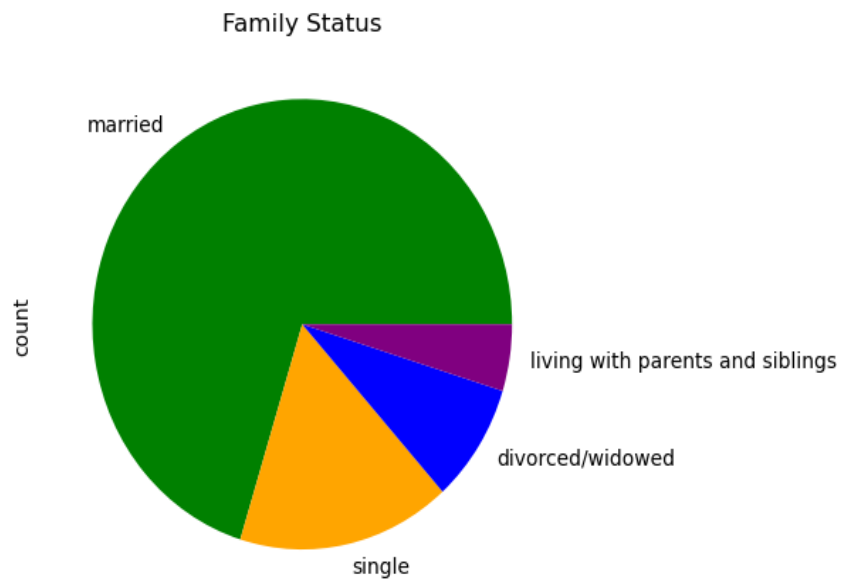
## What is the distribution of prices in the dataset?



The chart shows that the dataset has a right-skewed distribution, with a long tail to the right. This means that most of the data points are concentrated around the lower prices, while a few data points are spread out over the higher prices.

## Customer Profile and Region Breakdown

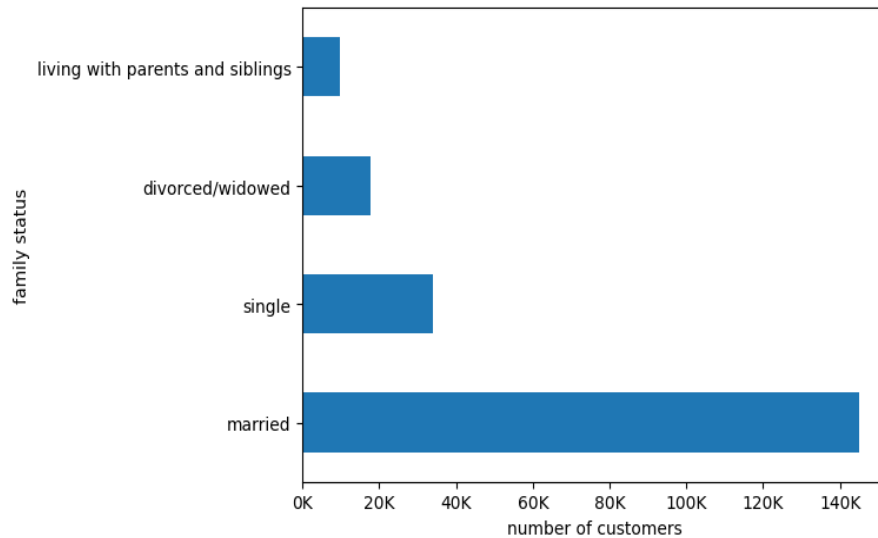
### What different classifications does the demographic information suggest?



This pie chart shows that most users are married, followed by single, divorced/widowed and living with parents and siblings.

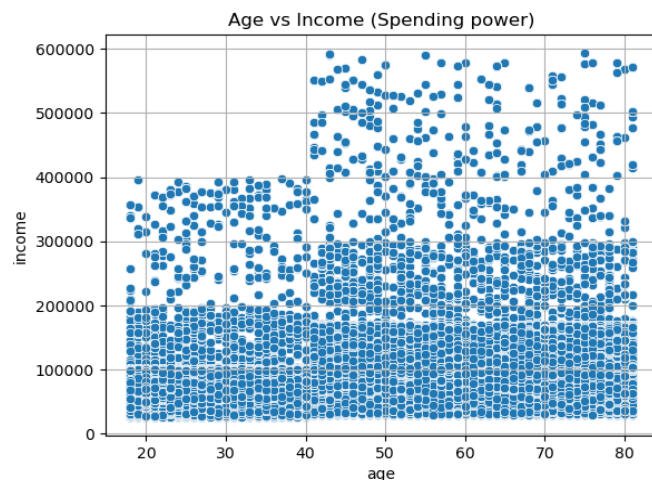
**What differences can you find in ordering habits of different customer profiles? Consider the price of orders, the frequency of orders, the products customers are ordering, and anything else you can think of.**

**What is the distribution of marital status among the customers count?**



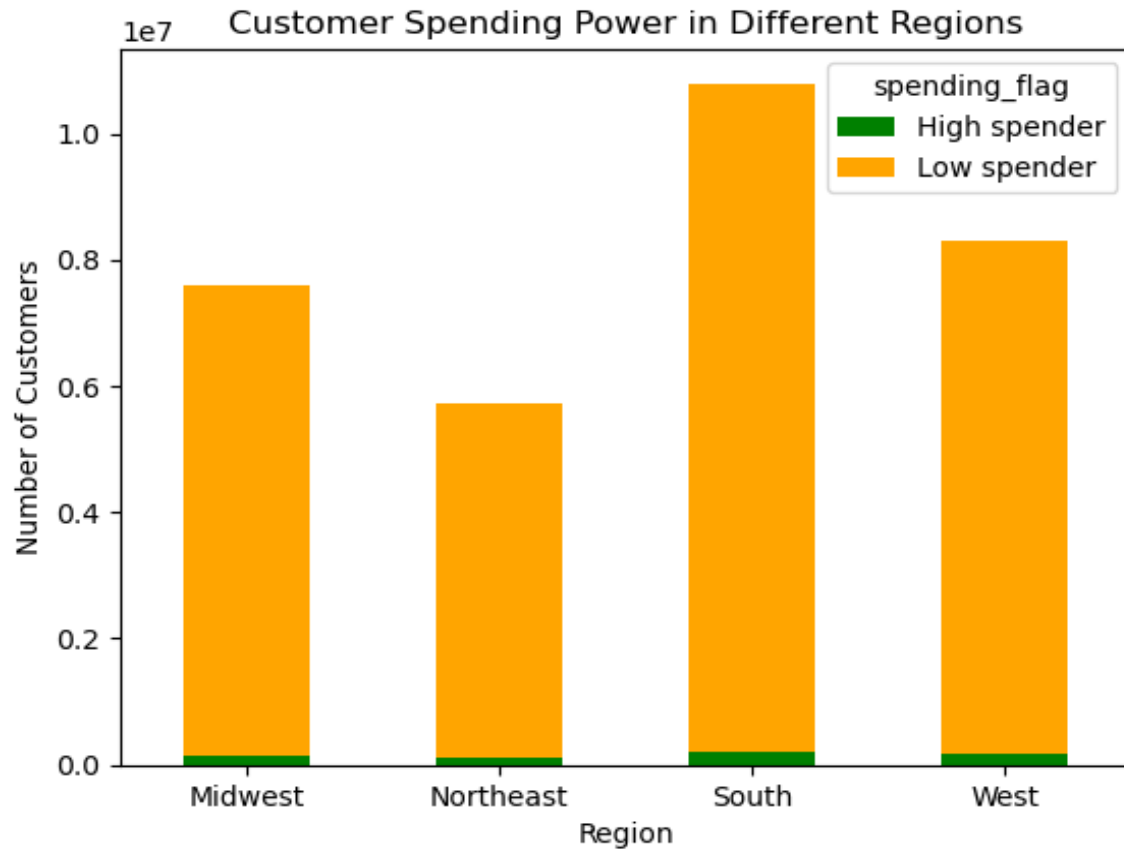
The chart shows that most customers are married, with more than 120,000 customers. Single customers are the second largest group, with about 50,000 customers. Divorced/widowed customers and those living with parents and siblings are the smallest groups, with less than 10,000 customers each.

**Do customers over 40 who are married tend to have higher incomes?**



This chart shows that customers over 40 have more income maybe also correlated to people over 40 who are married have higher incomes which explains this chart.

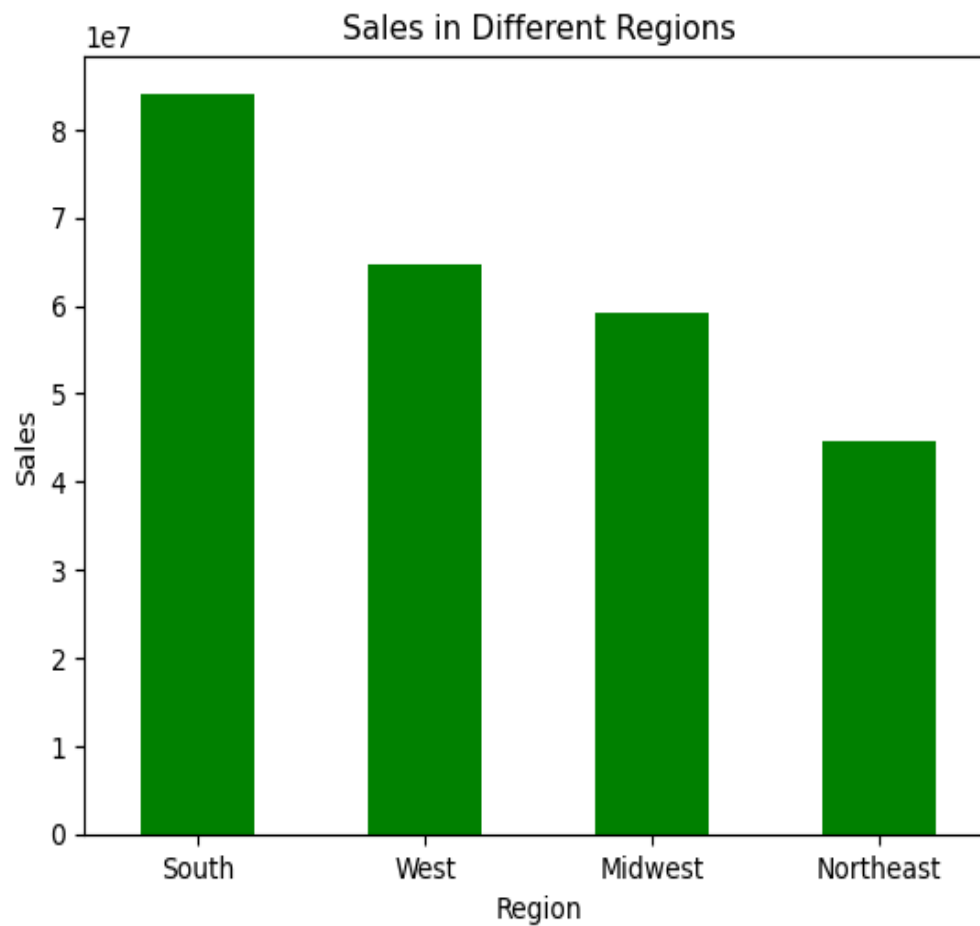
**What is the distribution of high and low spending customers across different regions?**



The chart shows the number of high and low spending customers across four different regions: Midwest, Northeast, South, and West. The South region has the highest number of customers, followed by the West, the Midwest, and the Northeast. The South region also has the highest proportion of high spenders, while the Northeast region has the lowest proportion. The South and the West regions have similar proportions of high and low spenders, with low spenders outnumbering high spenders. There is a regional variation in customer spending power, and that the Southern region is the most lucrative market for Instacart.

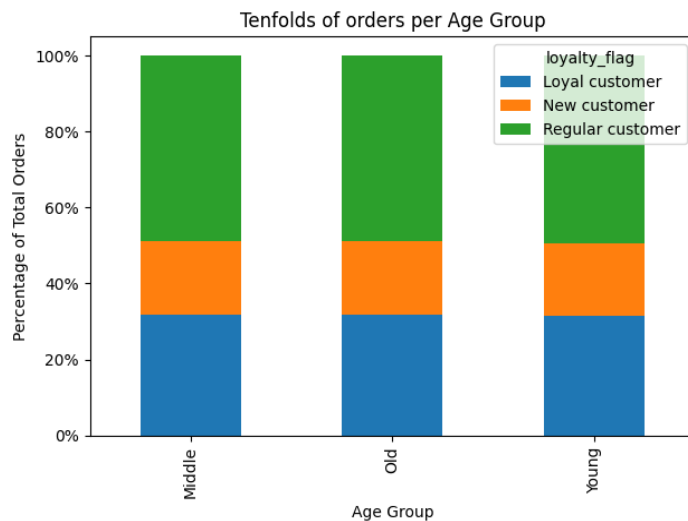


**How does the competition and demand for the online grocery store company vary across different regions?**



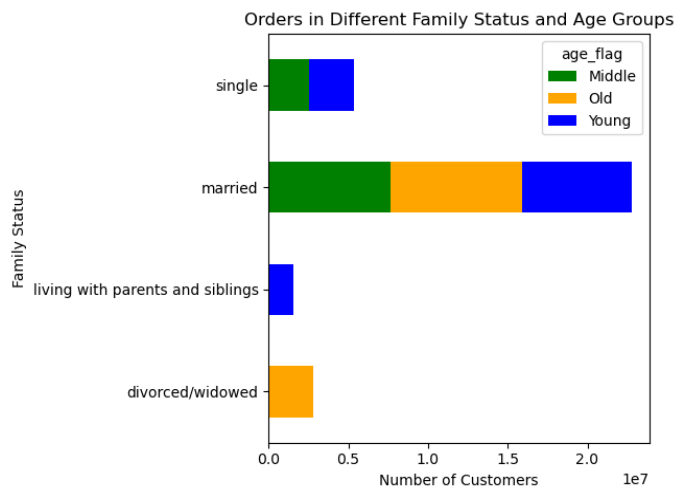
The chart shows that the South region has the highest sales, followed by the West, the Midwest and the Northeast. The chart also shows that there is a significant difference in sales between the South and the other regions, indicating that the South region is the most profitable and dominant market for Instacart.

## Is there a connection between loyalty and age status in terms of ordering habits?



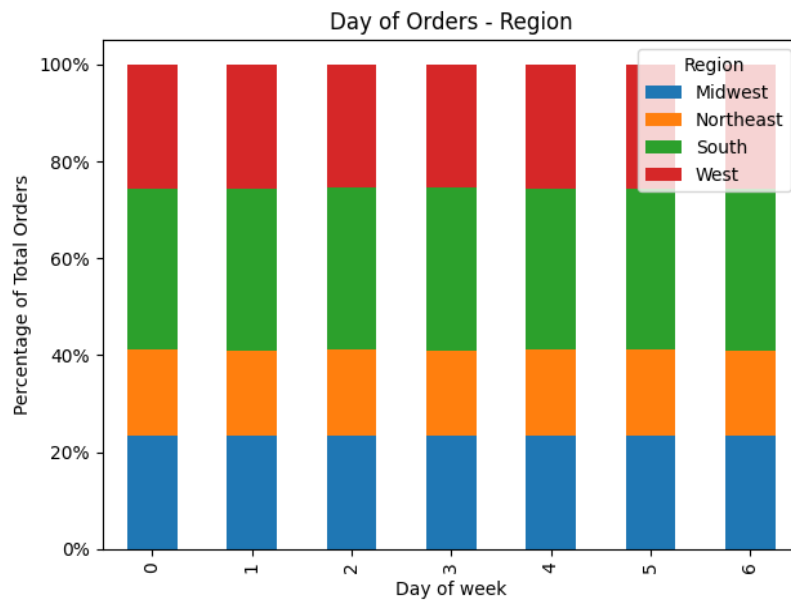
The chart shows that there is no significant change in different age groups regarding ordering habits but regular customers remain the most percentage as well as loyal customers following suit. The ordering habits remain the same throughout age groups.

## How does the number of orders vary across different age groups within each category?



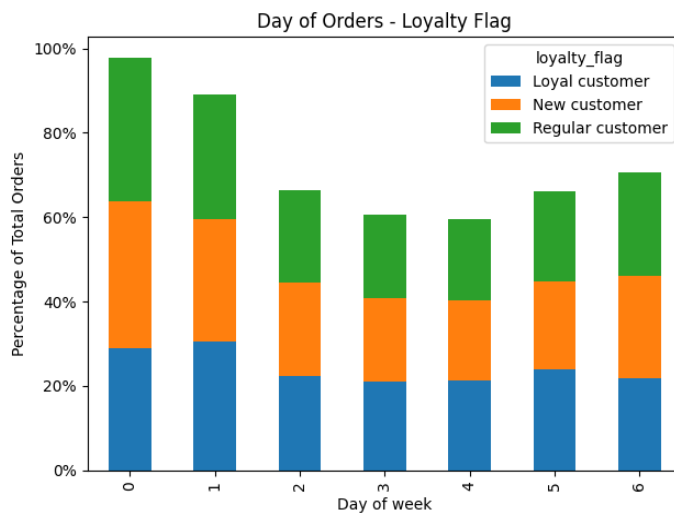
The chart shows that the married category has the highest number of orders. The middle-aged segment is the largest in the married category. The chart further indicates that the single and living with parents and siblings categories have a similar number of orders. The young segment is the dominant in both categories, with more than 65% of the total orders in each category. The living with parents and siblings category has the lowest number of order with 100% being the Young flag. The old segment is the only one in the divorced/widowed category, with 100% of the total orders in the divorced/widowed category.

## Are there differences in ordering habits based on a customer's region throughout the week?



There are no significant changes on a regions ordering habits throughout the week. However Southern region remain in the lead while west and midwest having similar proportions. And northeast remains last.

## Are there differences in ordering habits based on a customer's loyalty status?



Yes there are different ordering habits between loyalty status throughout the week. New and Regular customers remain in similar proportions throughout the week while loyal customers remain last except during Monday loyal customers spend more than New and regular customers.

## Recommendations

**Ad scheduling** - Based on the data, it's clear that customers typically order on weekends, particularly around 10 or 11 hours. To meet this demand, the grocery should ensure more than enough stock during peak times. Focusing ad advertisements on quieter days like Wednesdays and Thursdays with time-sensitive deals can boost activity. Leveraging niche advertising during early morning hours (1 am - 5 am) for products like coffee caters to specific customer needs. Implementing special sales or discounts on these quieter days compared to busier ones can further drive purchases and engagement.

**Departments** - Instacart should expand bulk-buying options for staples like produce, dairy, and eggs, catering to married customers and larger households by offering larger pack sizes or bundled deals. Conducting targeted market research on parents, will provide insights to tailor offerings and promotions to meet their needs. Marketing campaigns should emphasize the convenience and cost-saving benefits of bulk-buying these essentials, particularly for households with multiple members. Exploring partnerships with brands targeting parents could enhance offerings in the 'Babies' department through curated bundles or special promotions, potentially boosting sales in this category.

**Inventory analysis** - The majority of products fall within the low-range pricing tier. To attract customers seeking luxury items like high-quality meats, wines, or electronics, consider expanding offerings in the high-range bracket, based on the chart provided in the previous slide it is better to market this strategy to Young Adult High-Income group. Low-spending customers dominate across all U.S. regions, categorizing and targeting this group's needs can optimize sales. . To effectively serve this demographic, Instacart can divide its customer base accordingly and tailor its offerings to meet the needs and preferences of budget shoppers. This could involve highlighting affordable options, offering budget-friendly promotions, and ensuring a wide range of value-priced products are readily available.

**Regional Analysis** - The analysis suggests that customer behavior is minimally influenced by regional differences, with the 'Produce' department consistently performing strongly across all areas. It is recommended to adopt a broad marketing strategy not depending on geographic factors.

**Demographic analysis** - Customer categorization based on age and income reveals that Instacart is less favored by young adults regardless of income, while married customers represent a significant portion of Instacart's customer base. Targeting ads towards this demographic is essential. Categorizing customers based on ordering habits and brand loyalty highlights the importance of focusing marketing efforts on frequent and regular customers, as they constitute the majority of Instacart's customer base.

**What's the distribution among users in regards to their brand loyalty (i.e., how often do they return to Instacart)?**

Instacart's brand loyalty indicates that regular customers and loyal customers place the most orders. Furthermore, the most common interval is around 7 days, suggesting that many customers place orders weekly.

**Are there certain types of products that are more popular than others? The marketing and sales teams want to know which departments have the highest frequency of product orders.**

Bananas are the most sold product, while produce is the most successful department, dairy department and eggs have the 2nd highest frequency amount of orders.

**What differences can you find in ordering habits of different customer profiles? Consider the price of orders, the frequency of orders, the products customers are ordering, and anything else you can think of.**

Most users are married, followed by single, divorced/widowed and living with parents and siblings. Customers over 40 have more income maybe also correlated to people over 40 who are married have higher incomes. The 18-25 age group has the highest proportion of new customers compared to other groups. Regular customers have ordered the most out of other Brand loyalty groups. Customers that are young adults with higher incomes tend to buy more expensive products.

**Are there differences in ordering habits based on a customer's region?**

There are no differences in ordering habits based on a customer's regions the most ordered departments remain the same throughout the regions with The southern region leading.

**The sales team needs to know what the busiest days of the week and hours of the day are (i.e., the days and times with the most orders) in order to schedule ads at times when there are fewer orders.**

The busiest days of the week are Saturday, Sunday and Monday between 9:00am to 17:00pm.

## **Which are the most popular departments among loyalty status?**

.The produce department is the most popular among all types of customers, with regular customers making up the majority of orders.

## **What is the distribution of high and low spending customers across different regions?**

The South region has the highest number of customers, followed by the West, the Midwest, and the Northeast. The South region also has the highest proportion of high spenders, while the Northeast region has the lowest proportion. The South and the West regions have similar proportions of high and low spenders, with low spenders outnumbering high spenders.