Instacart Customer Behaviour

KENSUKE MORRIS

Overview

Company

Instacart, an online grocery store that operates through an app. Despite good sales, executives want to uncover more information about their sales patterns.

Problem

The Instacart stakeholders are most interested in the variety of customers in their database along with their purchasing behaviors. They assume they can't target everyone using the same methods, and they're considering a targeted marketing strategy. They want to target different customers with applicable marketing campaigns to see whether they influence the sale of their products.

Objective

Perform an initial data and exploratory analysis of customer data to derive insights and suggest strategies for better customer segmentation.

The results will inform what this strategy might look like to ensure Instacart targets the right customer profiles with the appropriate products

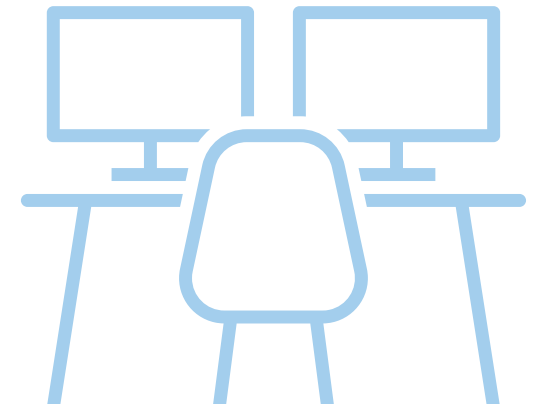# Project Resources

Skills

- Cleaning
- Wrangling
- Integration
- Exploration
- Aggregations
- Variable derivations
- Visualization
- Excel reporting

Datasets

- Instacart Customer Data

Role

Data Analyst

Tools: **Python** for Data Analysis and Visualization, **Excel** for Reporting

Guiding Questions

1. 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 (Q1).

2. They also want to know whether there are times of the day when people spend the most money, as this might inform the type of products they advertise at these times (Q2).

3. Instacart has a lot of products with different price tags. Marketing and sales want to use simpler price range groupings to help direct their efforts (Q3).

4. 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 (Q4).

5. The marketing and sales teams are particularly interested in the different types of customers in their system and how their ordering behaviors differ (Q5).
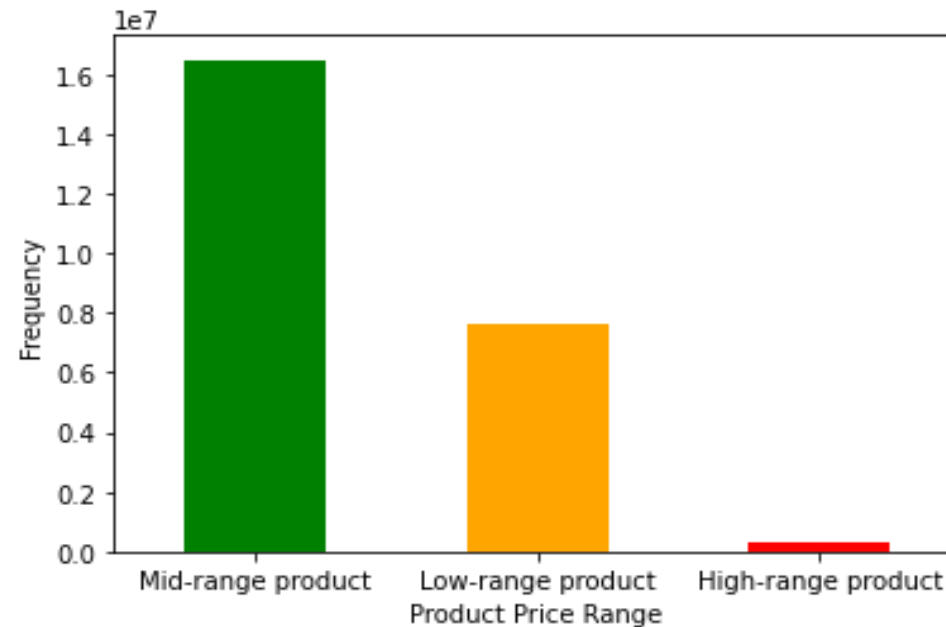
Q1 Findings
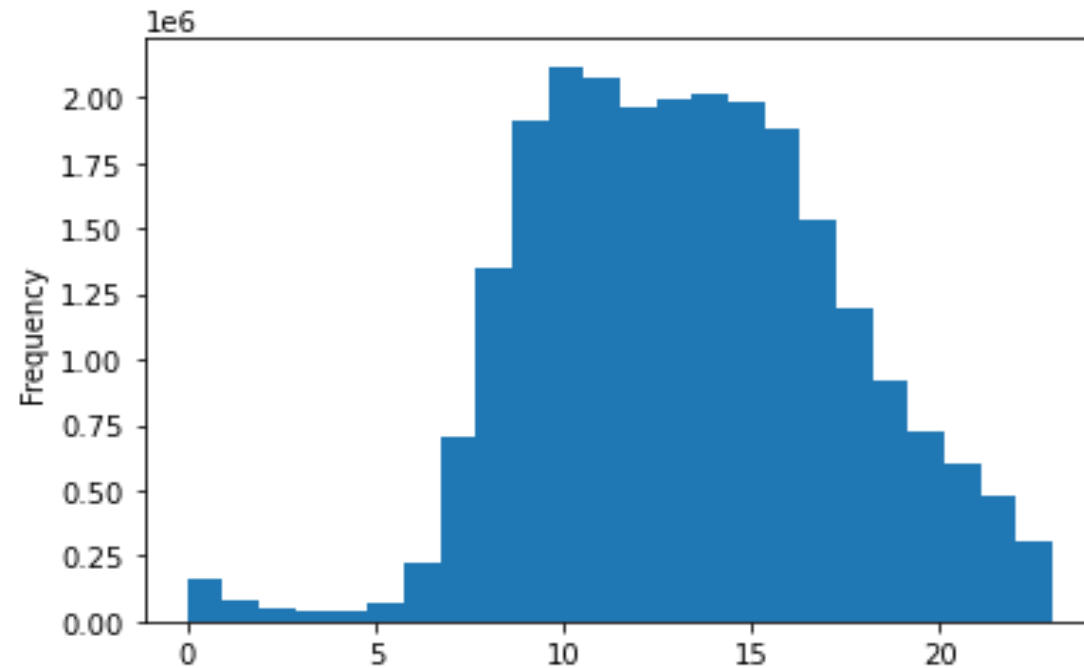
The histogram above shows that the busiest times are between 10am and 3pm during the day. Additionally, the most orders are on Saturdays and Sundays. There is a decrease in the number of orders during Mondays to Wednesdays. Then there are smaller gradual increases on Thursdays and Fridays.

Q2 Findings
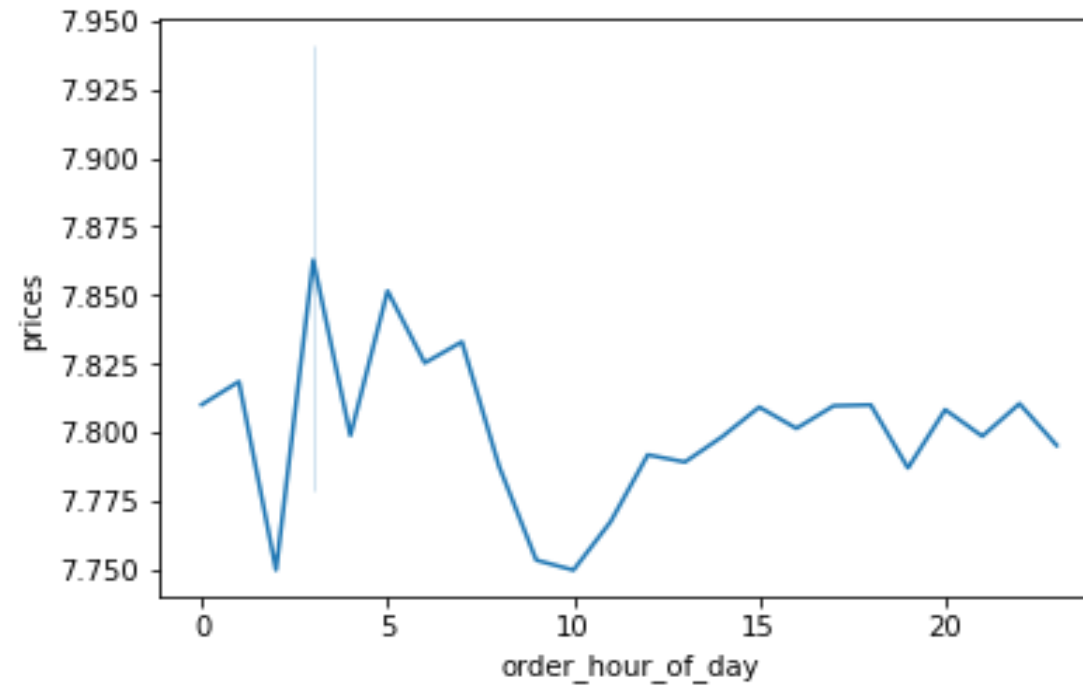
Although midday has more orders, people spend most of their money during the early morning period.
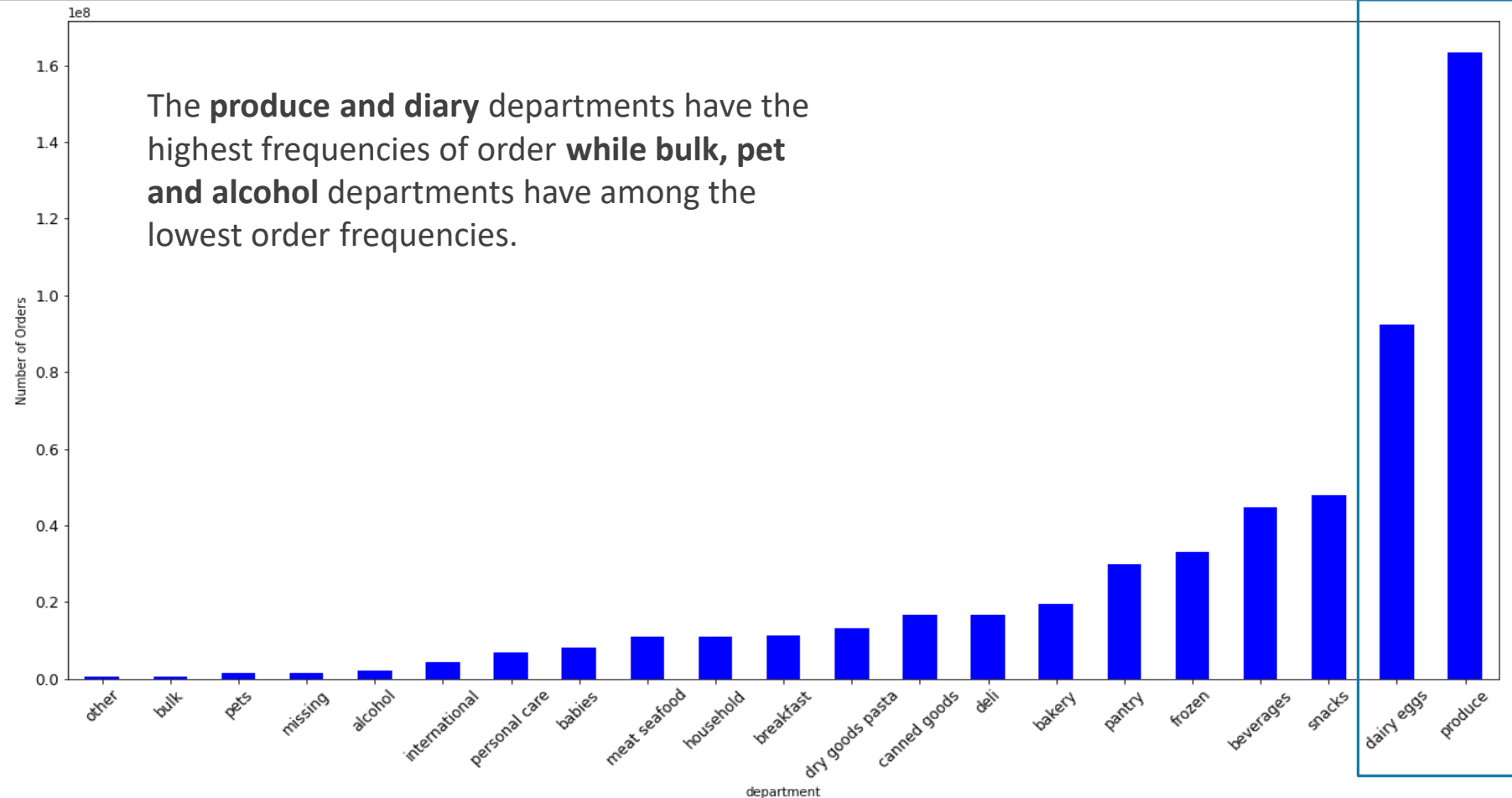
Q3 Findings

Criteria for grouping:
High-range: > $15
Mid-range: <= $15 but > $5
Low-range: <= $5

Most of the products sold are mid-range products, followed by low-range products.
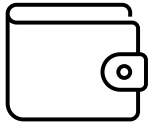Additionally, the most popular price range is between $1 to $15

Q4 Findings

The **produce and diary** departments have the highest frequencies of order **while bulk, pet and alcohol** departments have among the lowest order frequencies.

Q5 Findings

Customer Groups Created

Parental Group

Income Level

Loyalty Status

Time of the Day

Order Frequency from Parental Groups
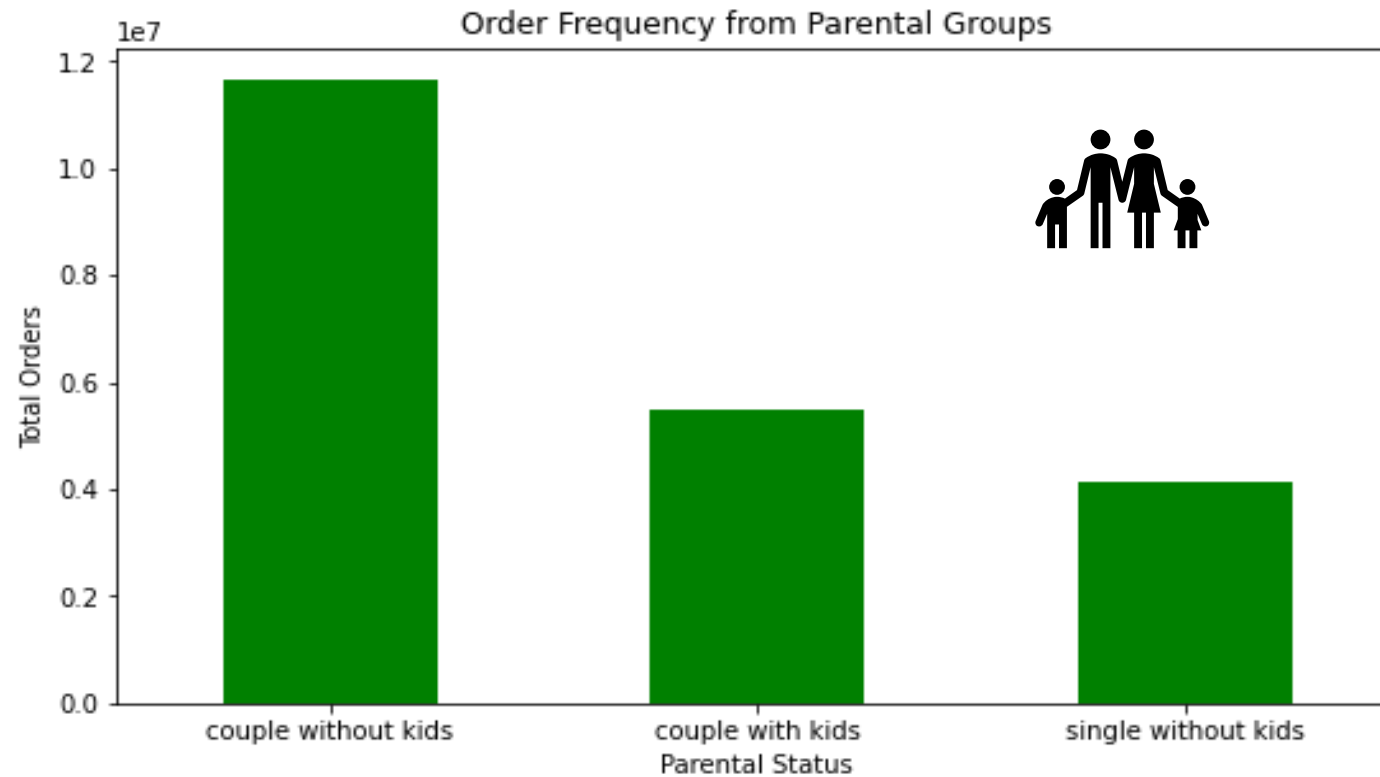
The graph is based one of the parental groups. Couples without children made the most orders on the Instacart platform. Single customers without children were not found.

Recommendations for Next Steps

o Schedule ads during Mondays to Wednesday since these are the days with the least number of orders. In specific, ads should be scheduled between 5am and 7am in the morning, and/or 7pm to 10pm since these are the times with fewer orders.

o High-range products need a sperate marketing strategy. Most orders are made by high income customers, but high range products are still low in sales.

o Since high income customers dominate the sales in most departments, luxury items particular in the personal care, babies, pets, and alcohol departments should be the focus of a targeted marketing strategy.

o Loyal customers are the least represented group in the dataset in contrast to regular customers. A customer lifetime marketing strategy is needed to increase the conversation rates of new customer to regular customers, and regular customers to loyal customers.
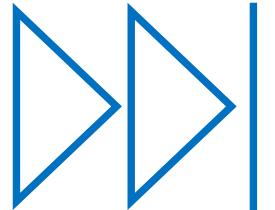
Data Limitations & Challenges

Limitation

o The analyst's interpretation of the number of dependents could not be confirmed since a data dictionary was unavailable.

o Additional demographic information such as ethnicity prevented further analysis

Challenge: Creating a criteria for parent group profiles

Solution: Groups were created based on the domain knowledge of the analysts. However, since no single parents with children were identified based on the filtering criteria, recommendations were omitted until further analysis is done in out next step.