



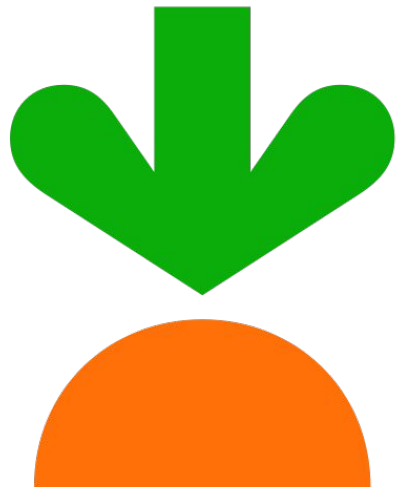
Customer Insights Analysis



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Overview



Instacart is an American delivery company that operates a grocery deliver and pick-up service in the US and Canada via a website and mobile app. Instacart stakeholders are considering a targeted marketing strategy. This analysis will inform what this strategy might look like to ensure Instacart targets the right customer profiles with the appropriate products.

Purpose and Objective

To perform an initial data and exploratory analysis of some of their data in order to derive insights and suggest strategies for better segmentation based on the provided criteria.

Tools, Skills, Methodologies

The data was imported into Jupyter Notebooks as a pandas dataframe. Data cleaning, wrangling, merging, grouping, and visualization was performed using NumPy, matplotlib, seaborn, and SciPy.

Key Questions

- 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.
- 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.
- 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.
- The marketing and sales teams are particularly interested in the different types of customers in their system and how their ordering behaviors differ. For example:
 - What's the distribution among users in regards to their brand loyalty (i.e., how often do they return to Instacart)?
 - Are there differences in ordering habits based on a customer's loyalty status?
 - Are there differences in ordering habits based on a customer's region?
 - Is there a connection between age and family status in terms of ordering habits?
 - What different classifications does the demographic information suggest? Age? Income? Certain types of goods? Family status?
 - 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.

Data

The majority of data was sourced from Kaggle: “The Instacart Online Grocery Shopping Dataset 2017”

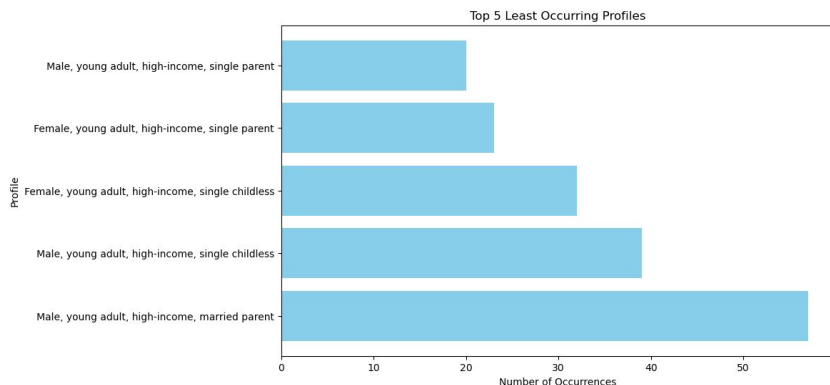
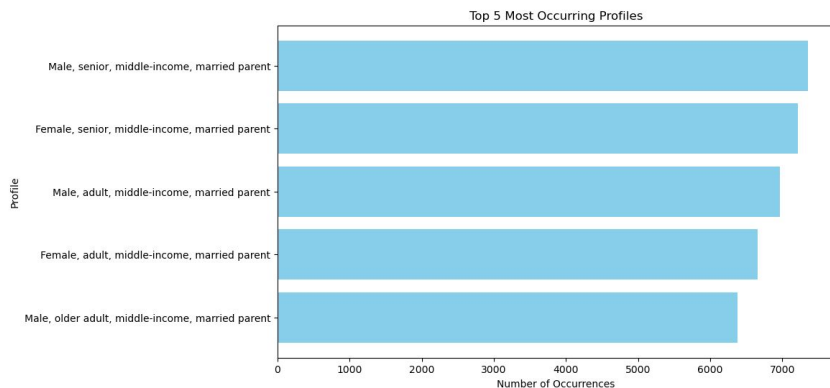
This set included four dataframes: orders, products, aisles, and departments.

Additional data on specific customer activity was generated for the purpose of this project by Career Foundry.



Process

- Import Data
- Wrangling
- Consistency Checks
- Combining Dataframes
- Deriving New Variables
- Grouping and Aggregating Data
- Create Visualizations



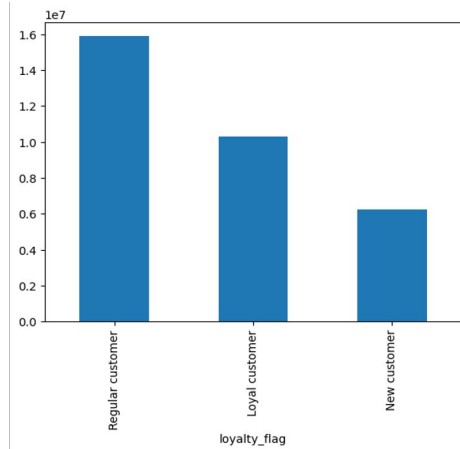
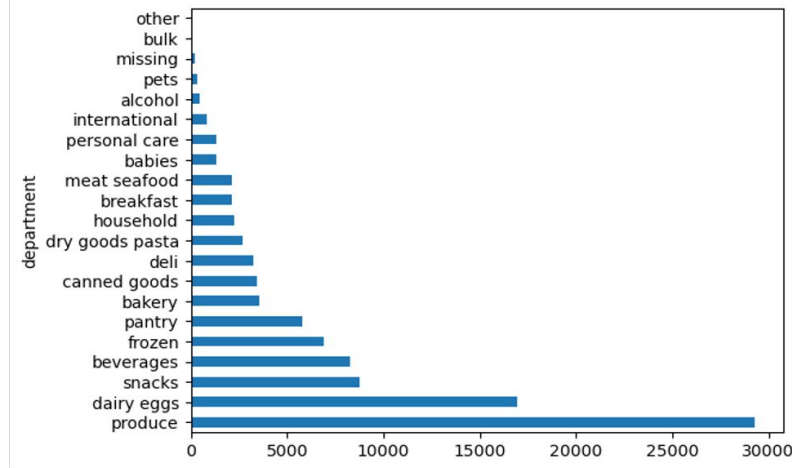
Challenges

It was challenging to parse through the different customer analytics to fit them into different demographic groups. I had information on customer gender, age, marital status, parental status, and income. I hadn't envisioned that creating demographic profiles out of those five variables would be so difficult, but the number of permutations was overwhelming.

I also found it difficult to imagine what would be most valuable to the marketing team. Without having experience in marketing, I found myself having to make decisions about what information to include in my report. I was unsure of which insights the marketing team would get the most out of.

Key Findings & Strategic Takeaways

- **Peak Ordering Times:**
 - Weekends, especially Saturdays, are the busiest shopping days.
 - Early morning (1AM-5AM) purchases are often emergency or impulsive, with expensive items purchased more frequently.
 - Marketing should encourage mid-week shopping to ease weekend demand.
- **Product Popularity & Sales Trends:**
 - Perishable grocery items (produce, dairy, eggs) sell the most, making them key promotional items.
 - Alcohol sales have strong potential, particularly for younger adults, pending state regulations.
- **Customer Loyalty & Retention:**
 - Most users order between 10-40 times, with highly loyal customers making more than 40 orders.
 - Regular customers should be incentivized to increase their ordering frequency with promotional offers.
- **Demographic-Based Marketing:**
 - Middle-income, married parents dominate Instacart's user base, suggesting a focus on child-friendly and household products.
 - High-income young adults are an underutilized market segment, and alcohol promotions could increase their engagement.





Lessons Learned & Future Considerations

- Some expected differences (e.g., regional disparities) were not evident, suggesting that factors other than geography drive usage patterns.
- More granular analysis of customer behavior (e.g., lifestyle preferences, household size) could further refine marketing strategies.
- Future work could incorporate external data, such as economic conditions or competitor analysis, for a more holistic view.

This project provided valuable insights into Instacart's customer base and delivered actionable recommendations that could drive targeted marketing campaigns and improve customer retention.

Thank you!



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[Excel](#)
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