Instacart Project

Marketing Strategy for an online grocery store

Case Study 4

Project Overview

Context

Instacart is an online grocery store that operates through an app. Instacart already has very good sales, but they want to uncover more information about their sales patterns.

Key Questions

- What are the busiest days of the week and hours of the day (i.e., the days and times with the most orders)?
- Are there particular times of the day when people spend the most money?
- 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 are particularly interested in the different types of customers in their system and how their ordering behaviors differ

Objective

The Instacart stakeholders are most interested in the variety of customers in their database along with their purchasing behaviors. They're considering a targeted marketing strategy to see whether they have an effect on the sale of their products.

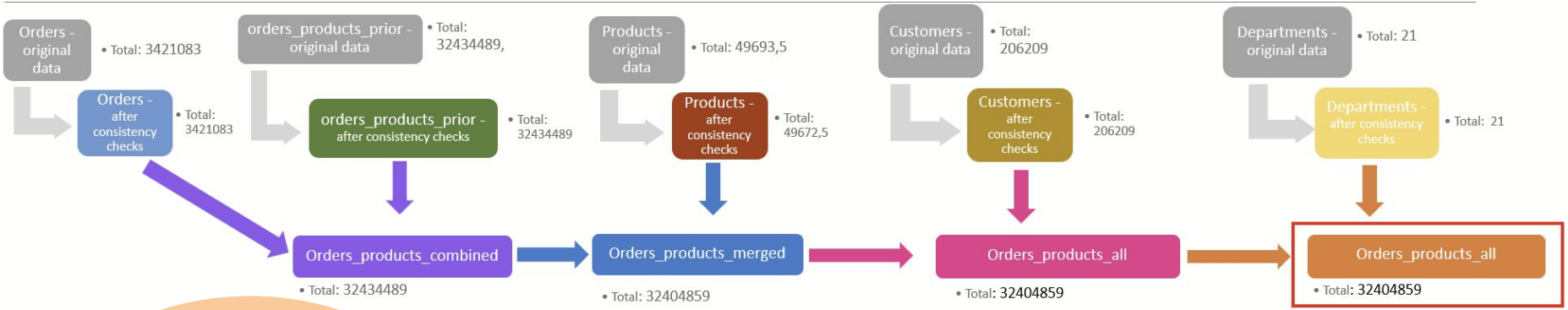
Data & Tools

Open-source datasets from Instacart: "The Instacart Online Grocery Shopping Dataset 2017" accessed via Kaggle on 01.02.2023. Data Dictionary

Excel Report KL//Instacart_final_report
Python Repository Github Project Overview

Instacart Data Population Flow

Access full excel report
Access Github for Python Repository

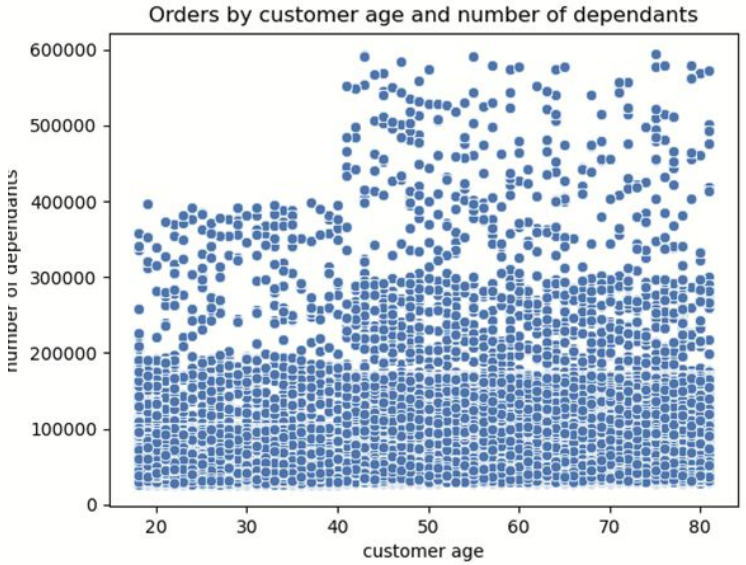


Exclusion flag
Condition: max_order < 5
Observations to be removed: 1441570
Final total count of order_products_all: 30993489

Insights on Order Behaviour

Access full excel report for additional visualisations
Access Github for Python Repository

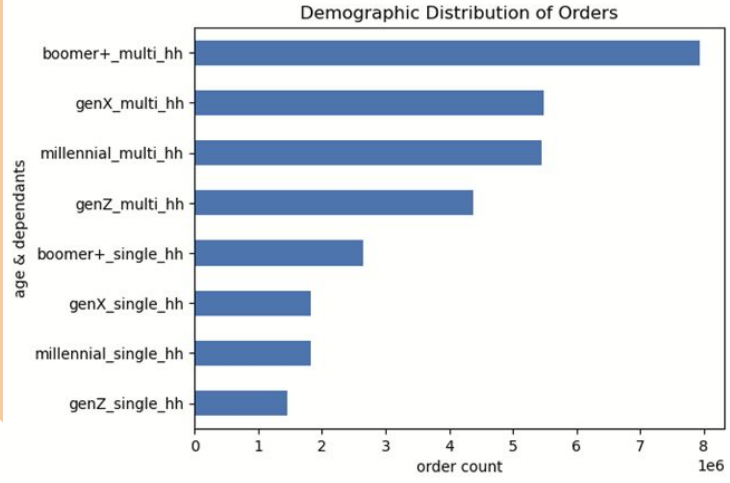
- Days with most orders are Saturday, followed by Sunday and Friday
- While the majority of instacart customers have an income <200.000$ it becomes visible in the scatterplot that there are more people in the 40+ age range that reach an income of >200.000$ and >300.000$ and even a few >400.000$ which is not visible in the age range below 40 years of age.



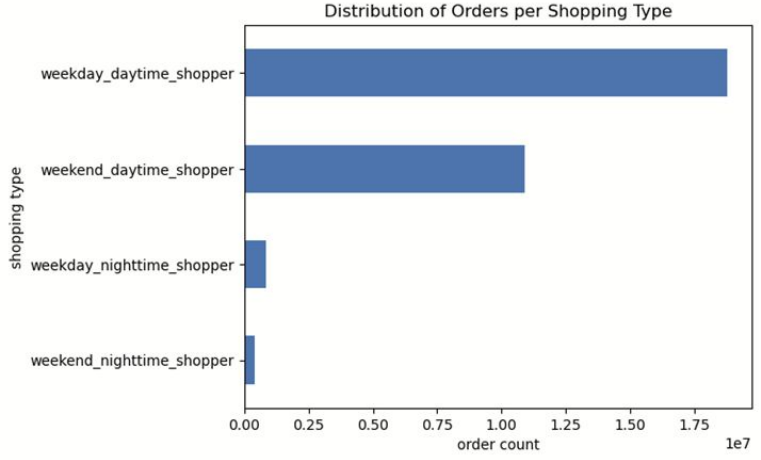
Customer Profile Segmentation

Access full excel report for additional visualisations and commentary
Access Github for Python Repository

Customer Profile 1
Age & Household dependants



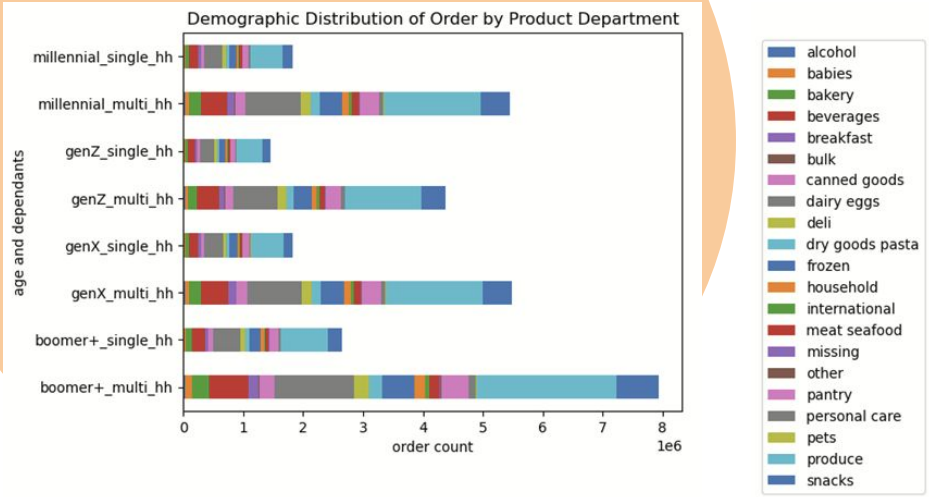
Customer Profile 2
Shopper Type



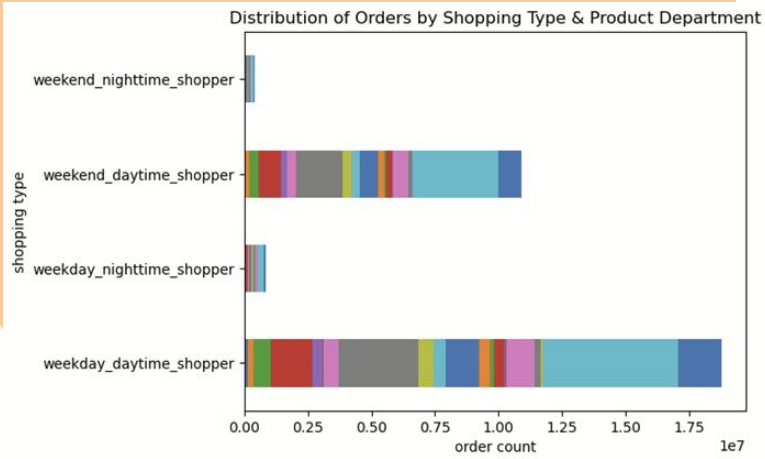
Customer Profiles & Product Insights

Access full excel report for additional visualisations and commentary
Access Github for Python Repository

Customer Profile 1
Age & Dependants



Customer Profile 2
Shopper Type



Instacart Summary & Recommendations

Within Instacart's customer base, the highest amount of orders are placed by Boomers+ (60 years and older) in a multi-person household. This group also has the highest share of above average income levels.

In terms of shopping types, most orders were placed by weekday daytime shoppers, followed by weekend daytime shoppers . Nevertheless it's important to keep in mind that most orders are placed on Saturday and Sunday when it comes to individual days.

The majority of the customer base are regular customers (who placed between 10 and 40 orders), followed by loyal customers (40+ orders) and new customers (less than 10 orders).

There is no significant difference between the customer profiles when it comes to their frequency of orders, their product choice, their loyalty or their price sensitivity.

Instacart already has a very loyal customer base across the US. They could benefit from attracting a younger audience (the 60+ year customers of tomorrow) and further incentivise customers through e.g. loyalty programs, newsletters and targeted promotions.

Access full excel report for all findings and recommendations

My Project Reflections

I conducted this analysis with Jupyter notebooks and the Anaconda libraries manager, using Python and relevant libraries (pandas, NumPy, os, matplotlib, scipy and seaborn). The project involved a lot of different steps from consistency checks, to data wrangling, column derivation up to the relevant visualisations. I found it most interesting to build the different customer profiles and analyse their order behaviour to be able to give informed suggestions to the instacart marketing team. I also learned during this project how crucial it is to properly organise and comment your code to be able to retrieve your steps. I also painfully learned the limits of my poor laptops RAM when I tried to merge several datasets in one notebook :)