INSTACART GROCERY BASKET ANALYSIS

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Instacart

Project context

- Instacart is a real-life online grocery delivery platform operating in the US and Canada.

- This project analyzes customer behavior, order trends, and segmentation to enhance marketing strategies.

Objectives

- Understand customer purchasing behavior (order timing, spending patterns, and demographics).

- Identify dominant customer profiles for targeted marketing.

- Optimize promotions and customer engagement strategies.

Methods & Tools

- Data Wrangling & Cleaning (Python - Pandas, NumPy).

- Visualization & Reporting (Tableau, Seaborn, Matplotlib).

- Data Source: Kaggle Instacart Dataset.

# When do customers order the most and spend the most?

Orders by Day of Week
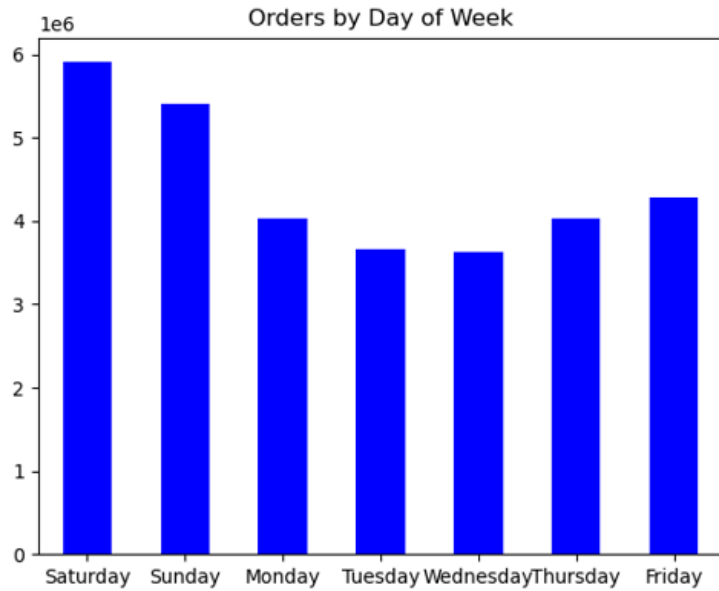
o Weekdays with biggest numbers of orders are Sunday and Monday, followed by Saturday. Weekdays with fewest orders are Wednesday and Tuesday.

o Majority of orders is made during the day between 9am and 5pm, i.e. during working hours for most people. Very few orders are made at night, between midnight and 5am.
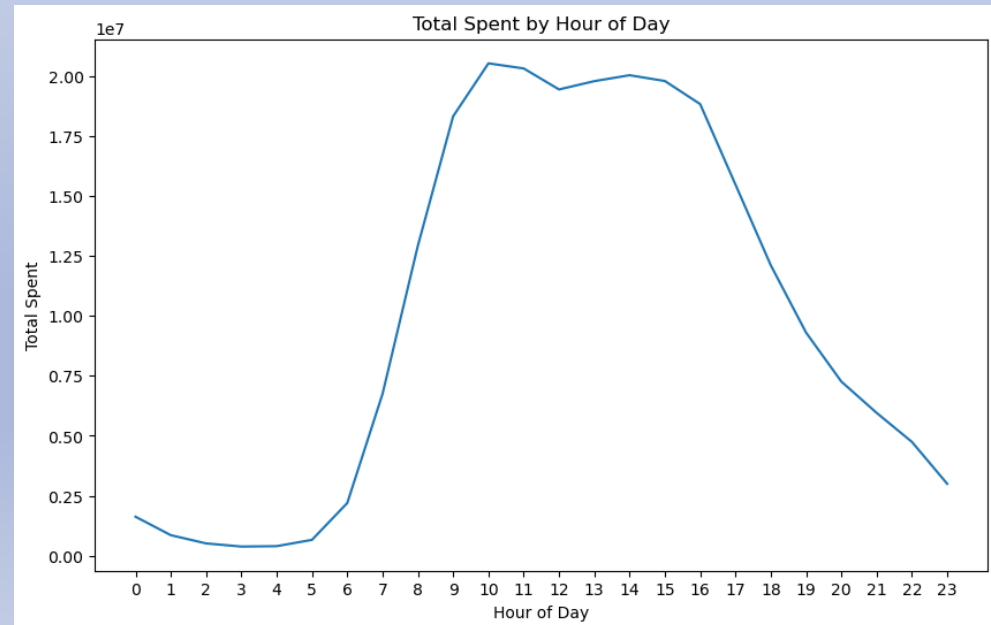
o Most money is spent during the day between 9am and 5pm.

o Customers spend least money in the middle of the night between 2am and 4am.


Total Spent by Hour of Day

Customer groups, age and income


Customer age versus income
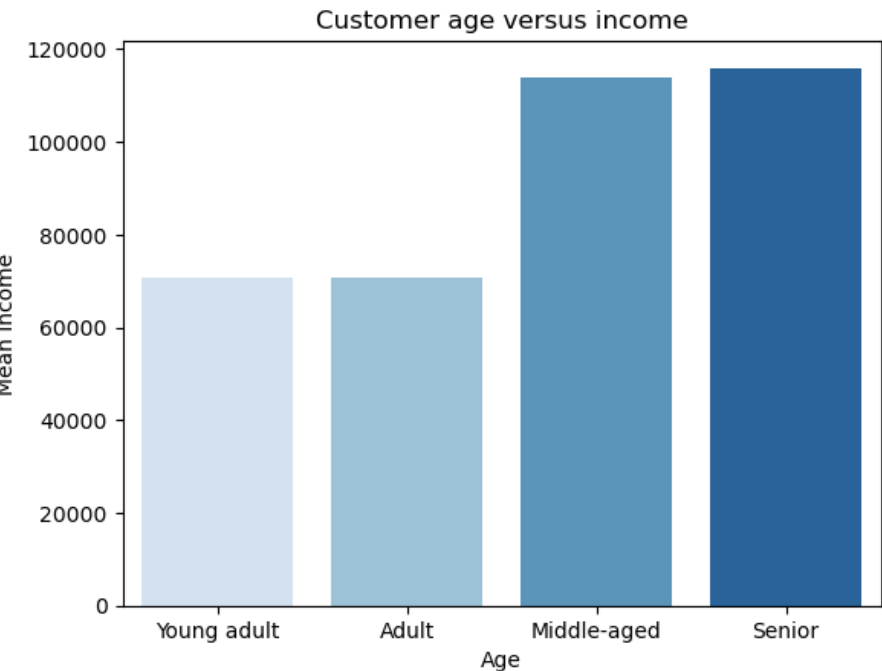
o There is a clear relationship between age and income, with middle-aged and senior customers earning more on average.

Customer group proportions within the database

o Middle-aged adults with dependants and seniors with dependants are the two biggest customer groups. Thus, not only do they have a higher spending potential, they also have more people in the household to shop for.
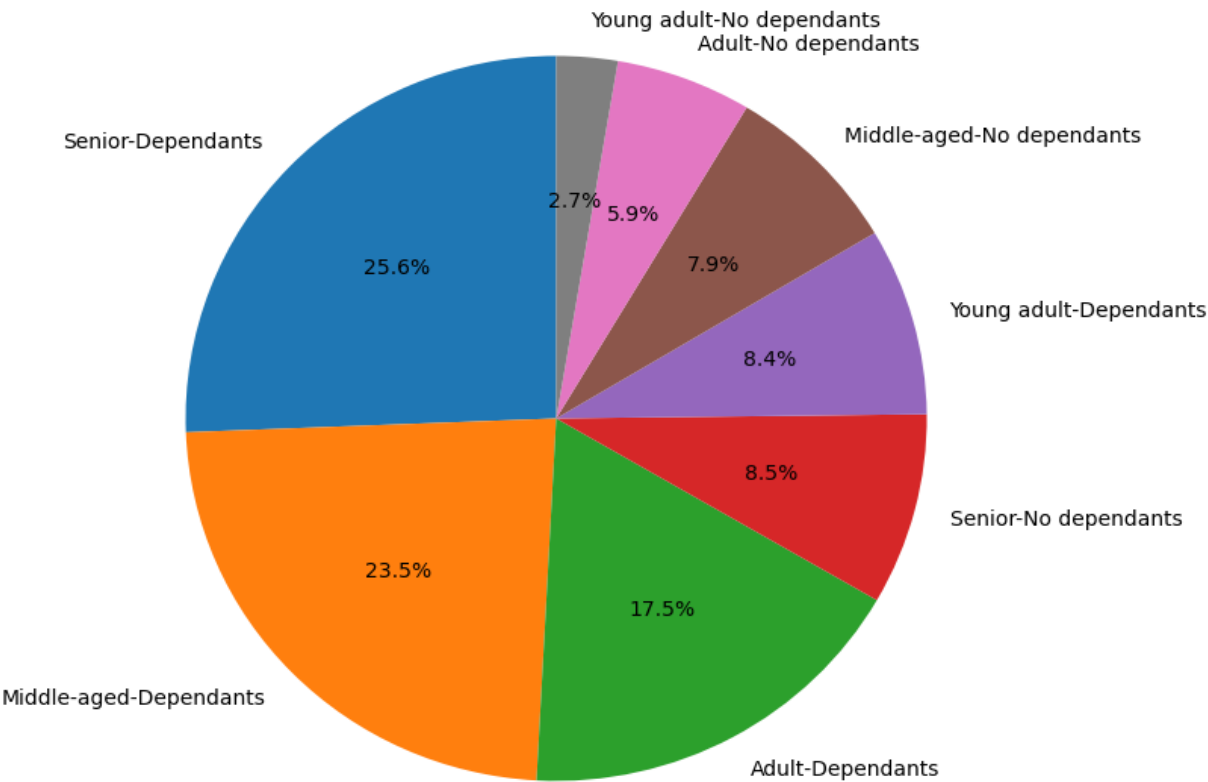
Popularity of different products by income level

Department Sales by Income Group
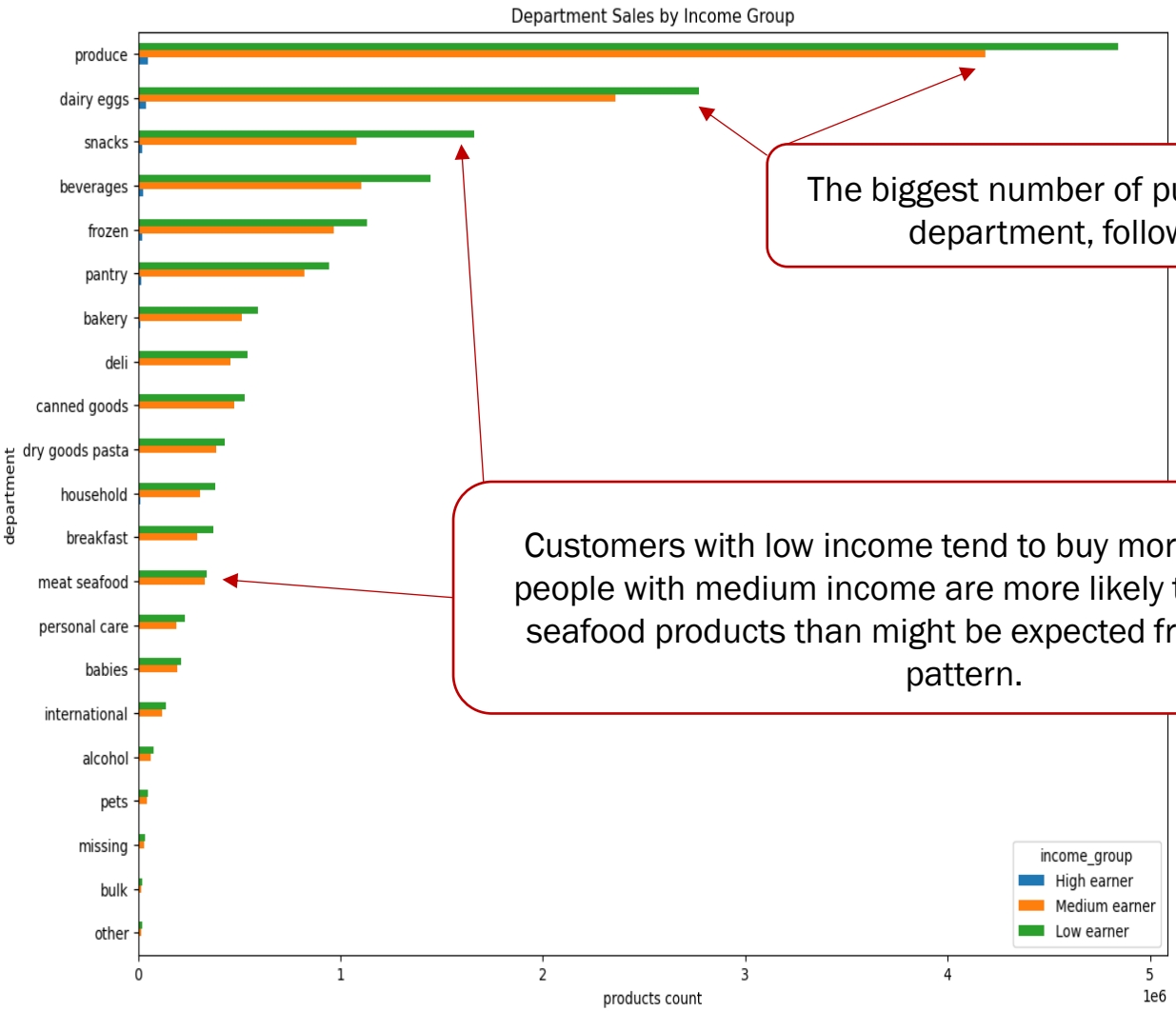
The biggest number of purchased products is from the produce department, followed by dairy/eggs departments.

Customers with low income tend to buy more snacks, while people with medium income are more likely to buy meat and seafood products than might be expected from the general pattern.

Very few customers are high earners
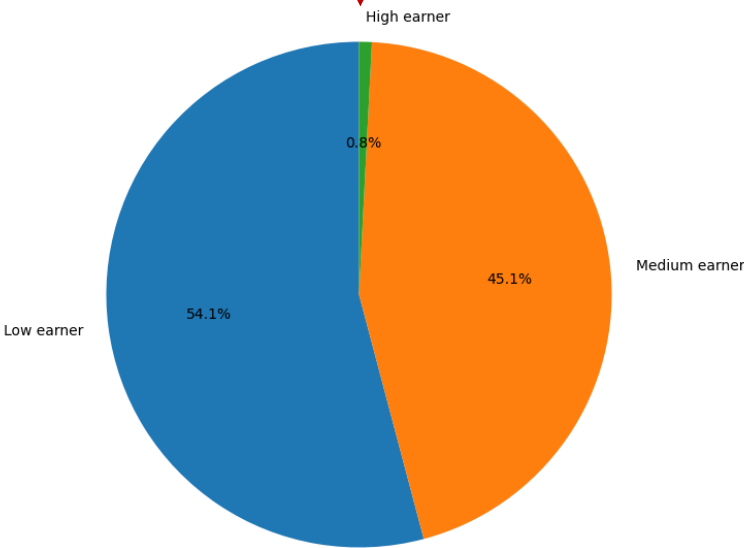
Data-supported recommendations

The prime time for ads is 10-4pm Saturday to Monday. The best time for any website maintenance is 3-4am mid-week.

The biggest customer groups are senior and middle-aged adults with dependants. Middle-aged and seniors also have the highest spending potential. Therefore, I recommend the allocation of additional resources to marketing efforts aimed at targeting these customer groups.

Company should ensure that the most popular departments, produce and dairy/eggs, are always well stocked. Promotions for products from these departments are likely to attract new customers.

Low earners are likely to be interested in new snacks appearing on the market, while medium earners might be tempted by premium meat cuts or seafood. The marketing department should target ads and promotions accordingly.

Thank you!

Questions?

📩 Feel free to reach out:
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🔗 Explore the code on GitHub:
https://github.com/ElenaSvirko/Instacart_Basket_Analysis