Instacart Grocery Basket Analysis

Instacart sought deeper insights into customer behavior to enhance segmentation strategies.
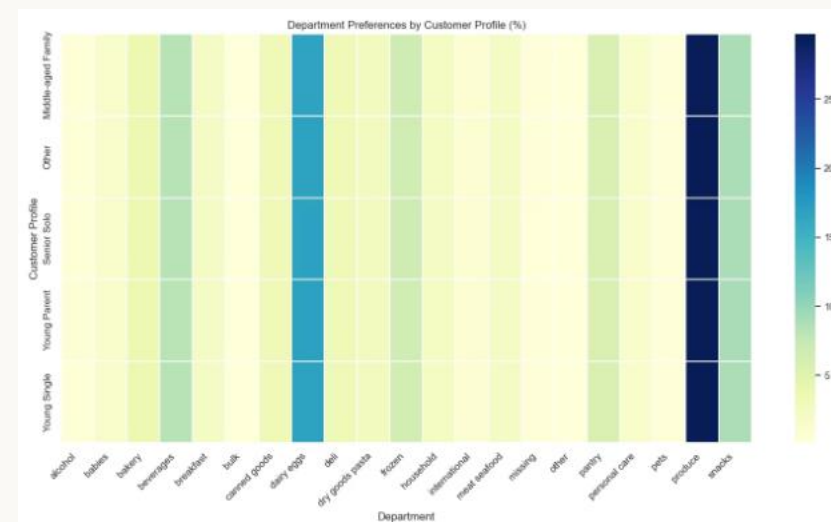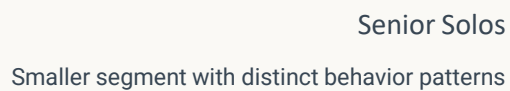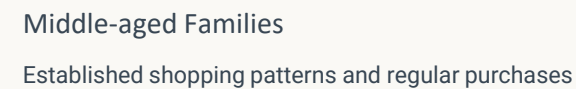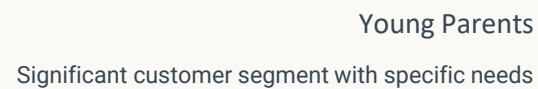
Project Objectives:

- Group customers by purchasing behaviors
- Examine product preferences across segments
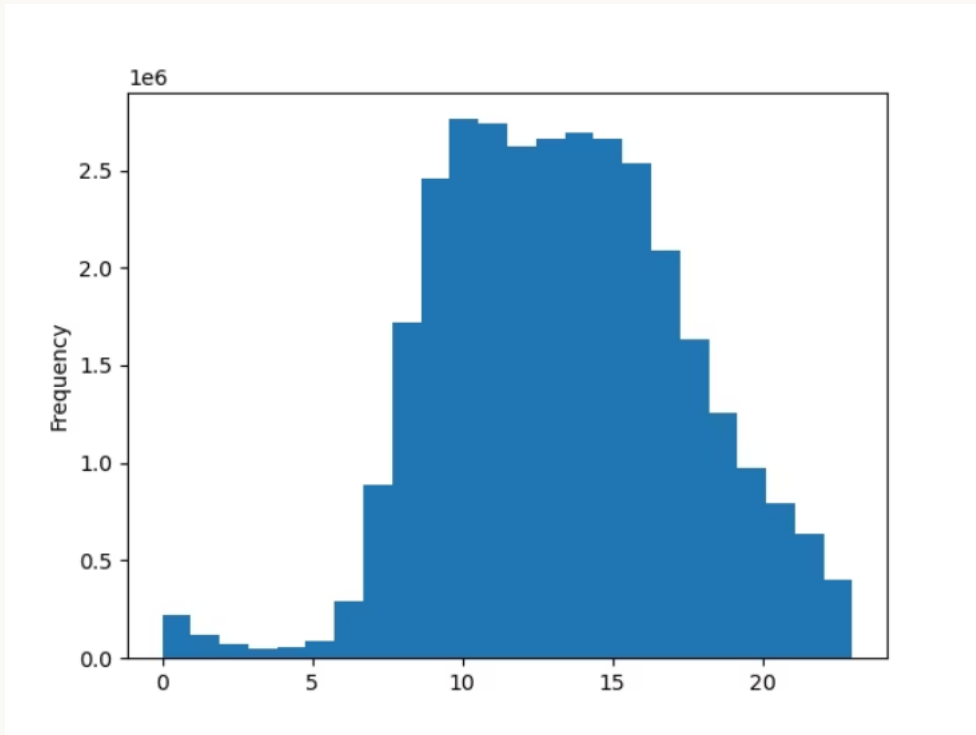- Create tailored customer experiences

Analysis Tools:

- Python (NumPy, Pandas)
- Seaborn & Matplotlib for visualizations

Customer Segmentation

Young Parents

Significant customer segment with specific needs

Middle-aged Families

Established shopping patterns and regular purchases

Senior Solos

Smaller segment with distinct behavior patterns

Young Singles

Emerging segment with unique preferences

Distribution of Customer Profiles

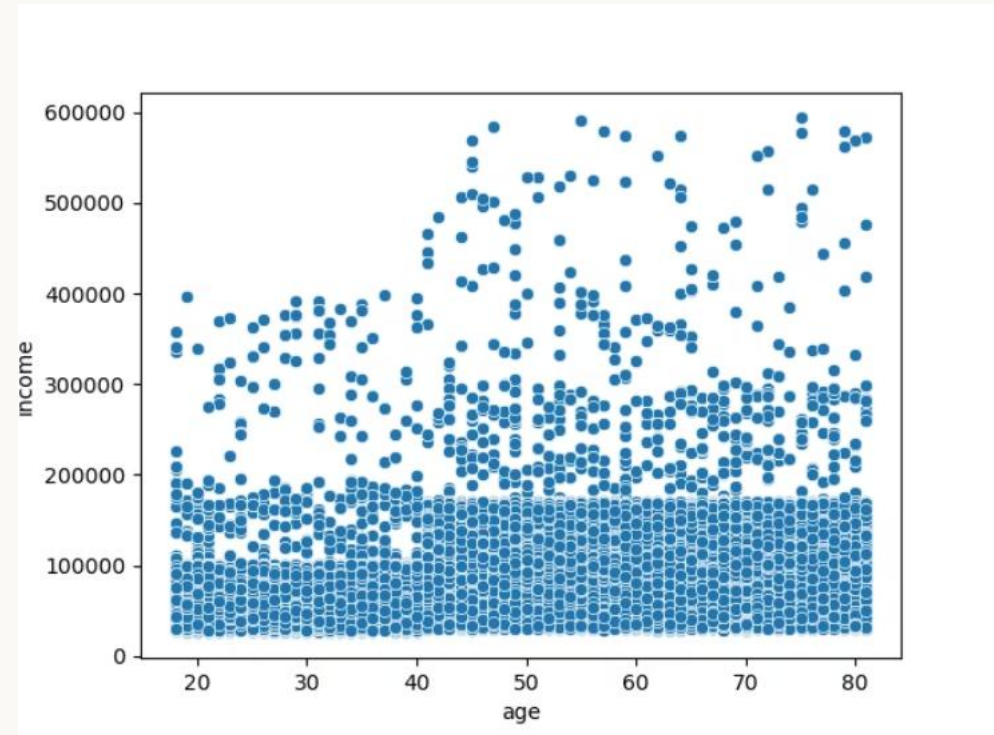Department Preferences by Customer Profile (%)

Customer Behavior Patterns

Ordering Trends by time-of-day. Highest order volumes occur between 10 AM and 3 PM, peaking around 11 AM–1 PM

Very few orders are placed in early mornings (before 7 AM) or late evenings (after 9 PM)
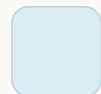

Customers aged 40 to 60 show a greater presence among higher-income earners

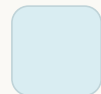Younger customers (under 40) are more densely packed in low to mid-income brackets

Instacart Recommendations

Promote Core Categories

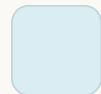Focus on high-performing Produce and Dairy & Eggs sections

Target Young Parents & Families

Offer bundled Breakfast and Household products

Senior Solos Strategy

Create personalized offers for Pantry and Care Essentials

Personalized Experience

Use profile segmentation to tailor product suggestions