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Emil Safarov

data analyst

portfolio

Emil Safarov

Data Analytics | Agile Practitioner Santa Monica, CA

14+ years experience in HR and Organizational Strategy,
Marketing across public and private industries

I've turned my passion for asking 'Why?' into a profession—structuring unstructured analytical skills into meaningful data-driven insights.



Education

- Master's Degree in Management

Public Administration Academy, Baku, Azerbaijan (2020–2023)

- Master's Degree in Diplomacy

Baku Slavic University, Baku, Azerbaijan (2010–2013)

- Bachelor's Degree in International Relations

Azerbaijan State Economic University, Baku, Azerbaijan (2005–2009)



Technical certification

- PMI Agile Certified Practitioner (PMI-ACP®)

Project Management Institute (PMI) (since 07/2023 – active 07/2027)

- Career Foundry Bootcamp - Data Analytics Certificate

Berlin, Germany (01/2024 – 04/2025)

- Santa Monica College - Data Analytics Certificate

Santa Monica College, Santa Monica, CA (02/2024 – expected 06/2025)

- Tourism and Destination Management

Singapore Cooperation Programme (10/2015)



Technical skills

Certified Agile Practitioner (PMI-ACP)

Expertise in Python, SQL, R, Tableau, Excel, UNIX

Instacart Grocery Basket Analysis

A Data-Driven Approach to
Customer Segmentation
& Ad Optimization



Project Overview

This project aims to develop a data-driven strategy to enhance Instacart's marketing efforts by analyzing customer purchasing behavior. The goal is to improve ad scheduling, optimize pricing strategies, and personalize customer targeting. Key focus areas include identifying peak shopping times, segmenting products by price range, and understanding customer demographics to drive better engagement and sales.



My role

This Data Analytics Bootcamp project simulated a real-world e-commerce scenario, showcasing how data analytics enhances digital marketing and customer segmentation. As a Data Analyst, I:

- Preprocessed Data: Ensured accuracy of Instacart sales and customer data.
- Conducted Analysis: Performed statistical tests and exploratory analysis to identify sales patterns.
- Visualized Data: Created charts and graphs to illustrate order behavior.
- Generated Insights: Provided actionable recommendations for Instacart's marketing strategies.



The Problem Statement

Instacart faces significant challenges in understanding customer purchasing behavior and optimizing marketing efforts. With a vast and diverse customer base, it is crucial to identify patterns in order frequency, spending habits, and product preferences to ensure effective ad targeting and pricing strategies. Without a data-driven approach, marketing efforts may lack precision, leading to inefficient ad spend and missed opportunities for customer engagement.

- Key Challenges for Instacart:
 - Identifying peak order hours for better ad placement.
 - Understanding high-value purchase trends.
 - Grouping products into meaningful price ranges.
 - Segmenting customers based on demographics and shopping habits.



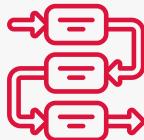
Research & Planning

Stakeholders wanted to understand their diverse customer base and purchasing behaviors to refine their targeted marketing approach. The project required analyzing key datasets to identify customer segmentation opportunities and sales trends.



Approach

- Python-Based Analysis: Used pandas, NumPy, matplotlib, seaborn, and scipy for data processing.
- Data Cleaning & EDA: Removed duplicates, handled missing values, and conducted initial trend analysis.
- Business Insights: Identified peak sales trends, customer loyalty patterns, and pricing strategy optimizations.
- Visualization & Reporting: Created graphs, charts, and summaries to effectively present findings.
- Structured Workflow & Deliverables: Organized datasets systematically, followed industry standards for data handling, and compiled the final report in Excel as requested.



Methodology

Step 1: Data Collection & Cleaning

Merged datasets & handled missing values.

Step 2: Data Analysis & Visualization

Identified order trends, spending behavior, and price segmentation.

Step 3: Customer Profiling

Created loyalty categories and analyzed order frequency by demographics.

Step 4: Insights & Recommendations

Formulated data-driven marketing strategies.



Data Sources Used

- Instacart Order Data (Purchases, timestamps, customer IDs).
- Customer Demographic Data (Age, Income, Region, Household Structure).



Key Research Insights & Statistical Findings

- Peak Order Hours: Found busiest shopping times for ad optimization.
- Spending Trends: Identified periods when customers make larger purchases.
- Product Price Ranges: Grouped items into useful price categories.
- Demographic Influence: Noted key differences in purchasing behavior across customer segments.



Recommendations

- Optimize Ad Timing: Focus on low-traffic periods for better engagement.
- Segment Product Promotions: Tailor campaigns to different customer groups.
- Enhance Loyalty Programs: Incentivize repeat customers.
- Use Data for Personalization: Improve product recommendations based on behavior.



Key Lessons Learned

- Data Cleaning is Essential: Ensures accurate insights.
- Visualization is Powerful: Simplifies complex trends for stakeholders.
- Customer Segmentation Improves Business: Data-driven marketing leads to better customer engagement.



Final Thoughts

Data analytics refines Instacart's marketing by revealing purchasing patterns, optimizing ads, and improving pricing. This analysis helps tailor promotions, enhance segmentation, and boost sales. Expanding these insights can improve recommendations and enable dynamic pricing, keeping Instacart competitive. This project underscores the power of data-driven decisions in business growth and customer satisfaction.

Tools that had been used



- Python Libraries: pandas, NumPy, matplotlib, seaborn, scipy.
- Jupyter Notebook: Used for data exploration and visualization.



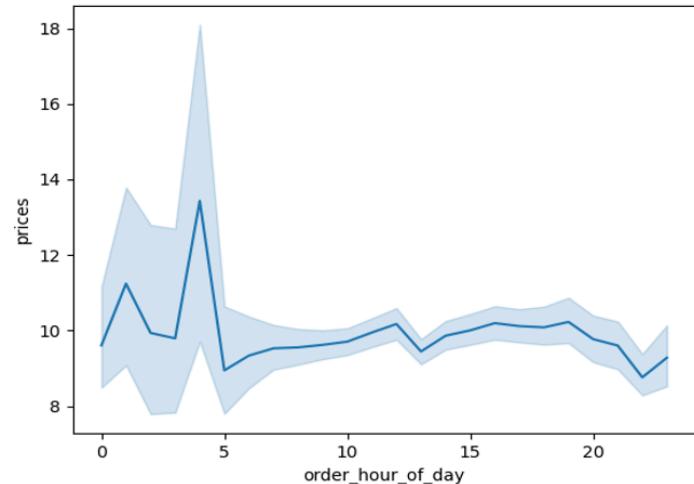
Link to the project presentation

<https://github.com/ezsafarov/Python-Instacart-Grocery-Basket-Analysis>

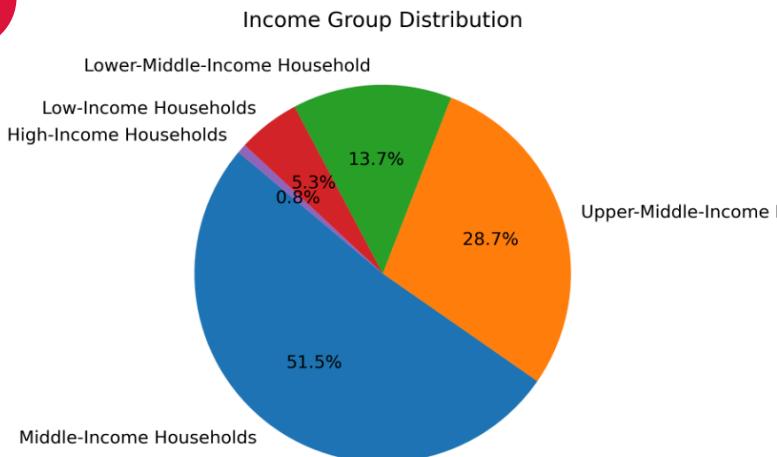


Observations from some visualization

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1. Prices spike sharply at 5 AM, then stabilize throughout the day. From 10 AM to 8 PM, they remain mostly consistent with minor fluctuations.
2. Middle-Income Households dominate the customer base at 51.5%, followed by Upper-Middle-Income at 28.7%.
3. The chart shows Instacart's top 10 departments by sales, with Produce leading, followed by Dairy & Eggs and Snacks, while Dry Goods Pasta and Deli rank lower.

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