Instacart Market Basket Analysis Report

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This project analyzes customer purchasing behavior to derive actionable insights. The study focuses on three key questions:

1. Optimizing product recommendations.

2. Segmenting customers based on shopping behavior.

3. Predicting customer churn to improve retention strategies.

Insights: Market Basket Analysis

Question 1: How can Instacart optimize product recommendations to increase average order value (AOV)?

Objective: Build a product recommendation system using Market Basket Analysis.

Key Findings:

1. Bag of Organic Bananas -> Organic Hass Avocado (Lift: 1.81, Confidence: 0.29)

2. Organic Hass Avocado -> Bag of Organic Bananas (Lift: 1.81, Confidence: 0.16)

3. Banana -> Organic Avocado (Lift: 1.50, Confidence: 0.11)

4. Bag of Organic Bananas -> Organic Strawberries (Lift: 1.44, Confidence: 0.16)

Actionable Insight: Cross-promote frequently paired items to increase basket value.

Insights: Customer Segmentation

Question 2: What are the distinct customer segments based on shopping behavior, and how can they be targeted effectively?

Objective: Segment customers using KMeans Clustering to identify distinct behaviors.

Findings:

1. High-frequency shoppers: Order every 7 days, average basket size of 15 items.

2. Occasional shoppers: Order every 30 days, average basket size of 5 items.

3. Seasonal bulk buyers: Order every 90 days, average basket size of 30 items.

Actionable Insight: Offer loyalty programs to frequent shoppers and targeted discounts to occasional shoppers.

Insights: Customer Churn Prediction

Question 3: What factors drive customer churn, and how can Instacart improve customer retention?

Objective: Predict churn risk and suggest retention strategies.

Key Findings:

1. Model Accuracy: 1.00

2. Long gaps between orders and small basket sizes are key drivers of churn.

Actionable Insight: Send re-engagement emails or personalized discounts to customers predicted to churn.

Conclusion

This project demonstrates how data analytics can drive personalized recommendations, improve customer engagement, and increase revenue for Instacart. By leveraging techniques such as Market Basket Analysis, Customer Segmentation, and Churn Prediction, actionable strategies can be implemented to enhance business outcomes.