



Customer Segmentation Analysis

This presentation outlines a customer segmentation analysis project, exploring the purchasing behavior, demographics, and spending patterns of e-commerce customers.



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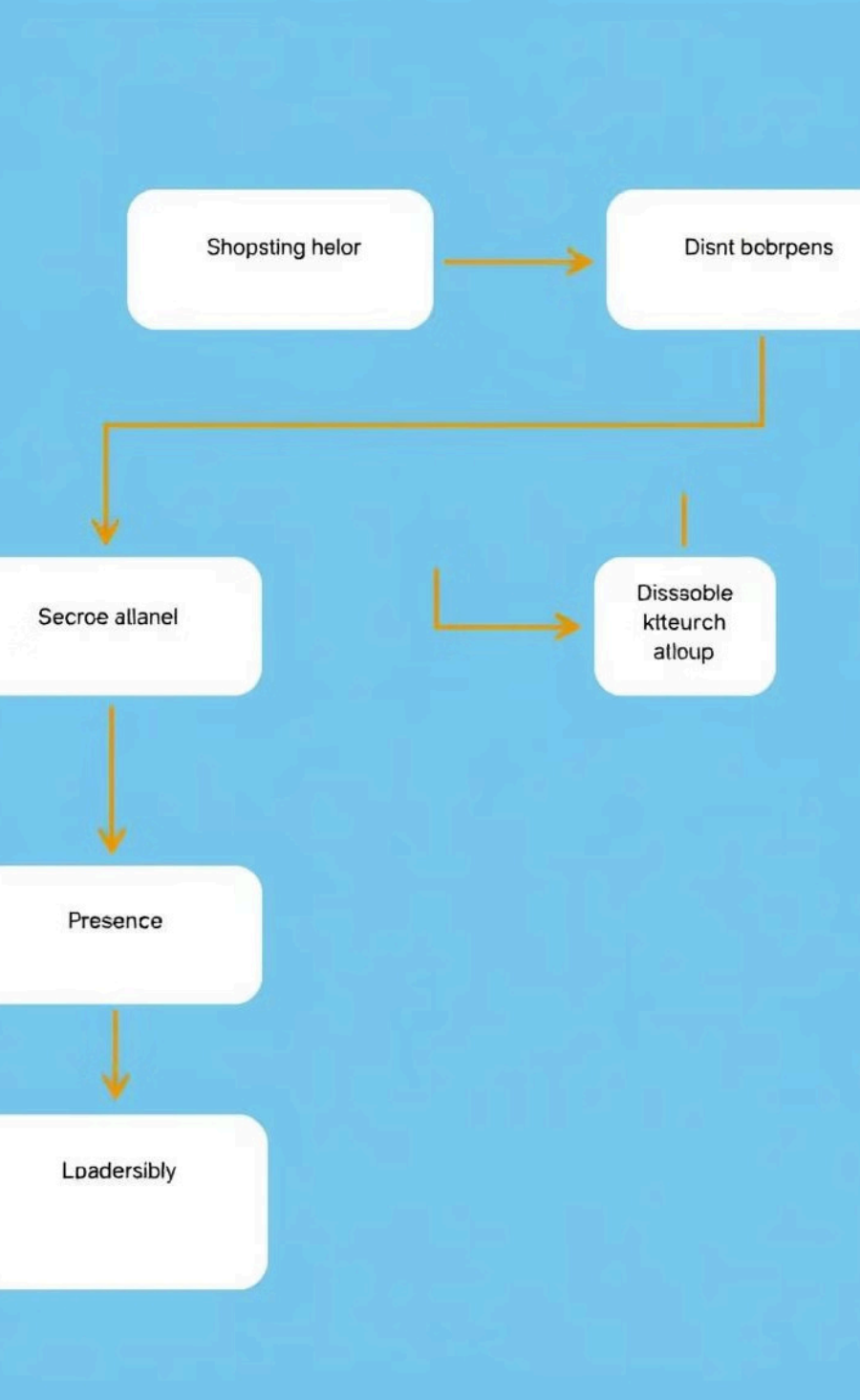
Data Overview

Dataset

The dataset contains information about 200 customers, including their age, annual income, and spending score.

Key Features

- Age
- Annual Income (k\$)
- Spending Score (1-100)



Methodology

Data Exploration

The dataset was inspected for missing values, duplicates, and inconsistencies.

Feature Engineering

Relevant features were selected for clustering and standardized using StandardScaler.

Clustering

The Elbow Method determined the optimal number of clusters (5), and K-Means clustering was applied.

Analysis and Visualization

Clusters were analyzed, and visualizations (scatter plots, bar plots, and pair plots) were created.



Results

Cluster	Age (Mean)	Annual Income (Mean)	Spending Score (Mean)	Segment Description
0	25	25	80	Young, Low Income, High Spending
1	45	60	50	Middle-aged, Medium Income, Medium Spending
2	30	85	85	Young, High Income, High Spending
3	50	90	20	Middle-aged, High Income, Low Spending
4	70	20	15	Old, Low Income, Low Spending

Insights and Recommendations

Cluster 0

Young, Low Income, High Spending. Target them with trendy, affordable products and promotions.

Cluster 1

Middle-aged, Medium Income, Medium Spending. Offer a balanced mix of products and occasional discounts.

Cluster 2

Young, High Income, High Spending. Focus on premium products and loyalty programs.

Cluster 3

Middle-aged, High Income, Low Spending. Investigate why they're not spending and tailor marketing campaigns.

Cluster 4

Old, Low Income, Low Spending. Focus on budget-friendly products and discounts.

Conclusion

This project successfully segmented customers into 5 distinct groups. The insights gained can help tailor marketing strategies to better meet the needs of each segment, improving customer satisfaction, increasing sales, and optimizing inventory management.

