

Customer Segmentation Analysis Using Power BI

Welcome to our Power BI project on customer segmentation analysis, leveraging the '**Shopping Trends**' dataset to unlock valuable insights.

TEAM 2

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Introduction to Power BI

- Power BI, by Microsoft, is a powerful business analytics tool for transforming raw data into actionable insights.
- It enables interactive dashboards and visually engaging reports, enhancing decision-making.
- Seamlessly integrates data from multiple sources for a unified view of business metrics.
- Essential for simplifying data, uncovering trends, and presenting insights effectively.



The Data Analytics Journey



1

Data Gathering

The first step involves sourcing and collecting relevant data, from multiple sources.

2

Data Preprocessing

Cleaning, transforming, and organizing data.

3

Data Exploration and Insights

Once the data is preprocessed and in a usable format, the Data Exploration and Insights phase involves examining the data interactively, identifying patterns, trends, and relationships, and generating actionable insights.

4

Data Visualization

Transforming insights into visual representations to communicate findings effectively for decision-making.



The Shopping Trends Dataset

1

Customer Information

Captures demographics, purchase history, and customer preferences to identify behavior and segmentation opportunities.

2

Product Details

Provides insights into product categories, pricing, and sales trends to analyze performance and demand.

3

Transaction Data

Records purchase details, including date, time, and amount spent, to uncover spending patterns and seasonality.

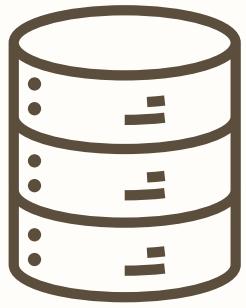
Data Gathering

-- involves collecting relevant data from various sources for analysis.

- Dataset used - "Shopping Trends" dataset
- Data origin - from Kaggle
- Ensuring data quality and relevance and collecting diverse data types (e.g. demographic, transactional, or behavioral data).
- Purpose - To provide a comprehensive dataset that forms the foundation for meaningful insights.

Data Cleaning and Preprocessing

-- cleaning, transforming, and organizing raw data to ensure accuracy, consistency, and readiness for analysis.

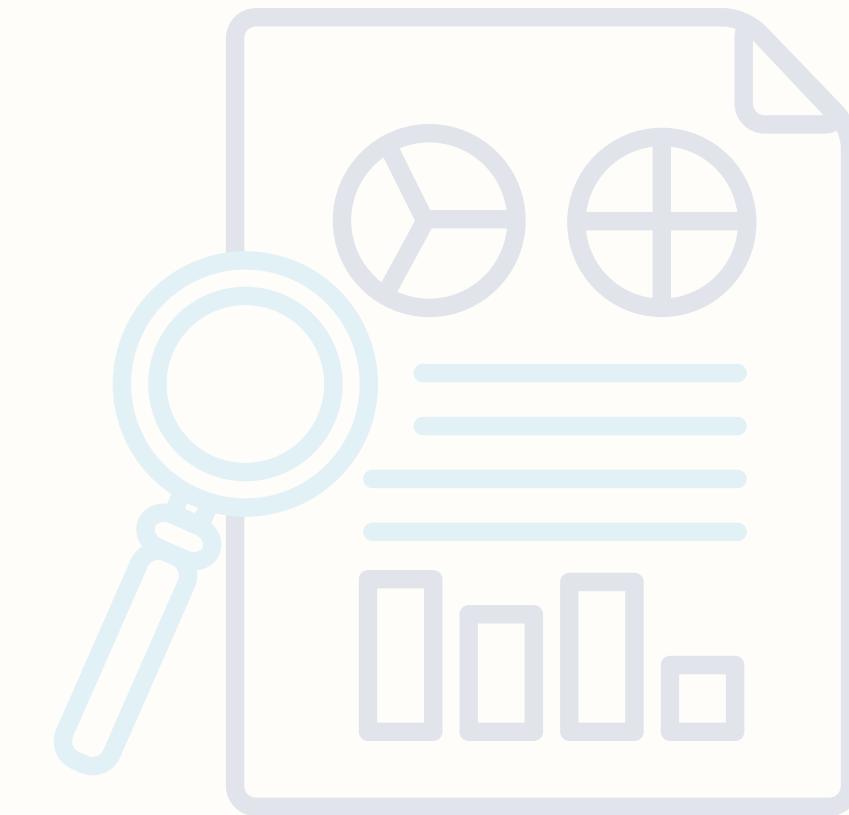


Data Cleaning

Addressing missing values, inconsistencies, and outliers to ensure data accuracy and reliability.

Data Transformation

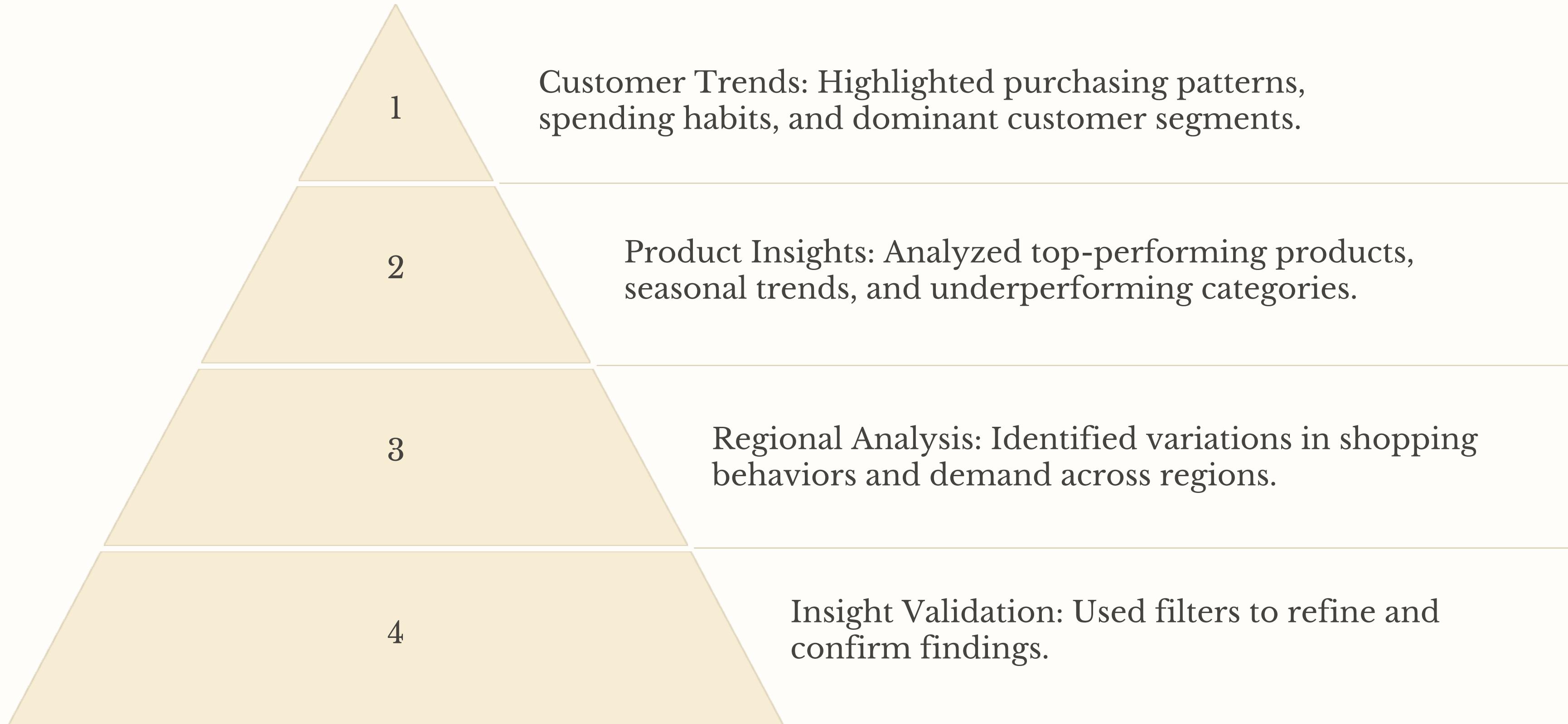
Converting data into a suitable format for analysis, including aggregation and feature engineering.



- Added key features like Age Group, Review Sentiment, and Loyalty Level using DAX.
- Created measures such as Seasonal Revenue, Churn Risk, and CLTV for deeper insights.
- Applied advanced transformations to enhance data usability and readiness.

Data Exploration and Insights

-- involves examining the data interactively, identifying patterns, trends, and relationships, and generating actionable insights.





Data Visualization

-- graphical representation of data to simplify understanding and analysis.



Makes complex data more accessible and engaging.



Helps uncover trends, patterns, and insights quickly.



Enhances decision-making by presenting key information visually.



Used various Key Visualizations such as Donut Charts, Bar Charts, Line Charts, Column Charts, etc.



Clear, actionable insights for driving business decisions.



The Power of Data Visualization

1

Engagement

Visualizations make complex data more accessible and engaging for audiences.

2

Insights

They help uncover hidden patterns and trends, revealing valuable insights.

3

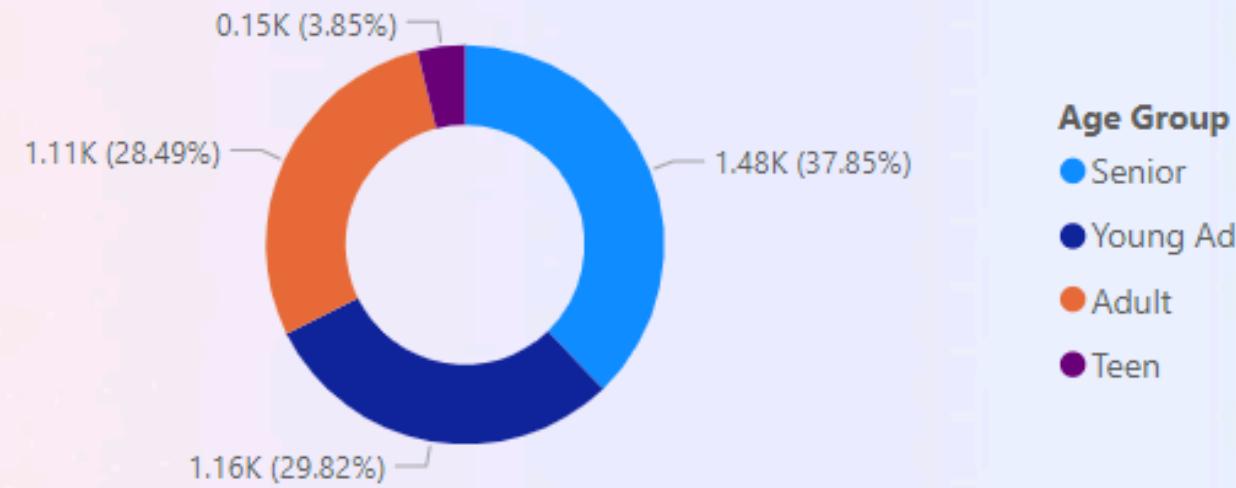
Decision Making

Informed decision-making based on data-driven evidence and compelling visualizations.

Dashboard

SHOPPING TRENDS DASHBOARD

Count of Customer ID by Age Group



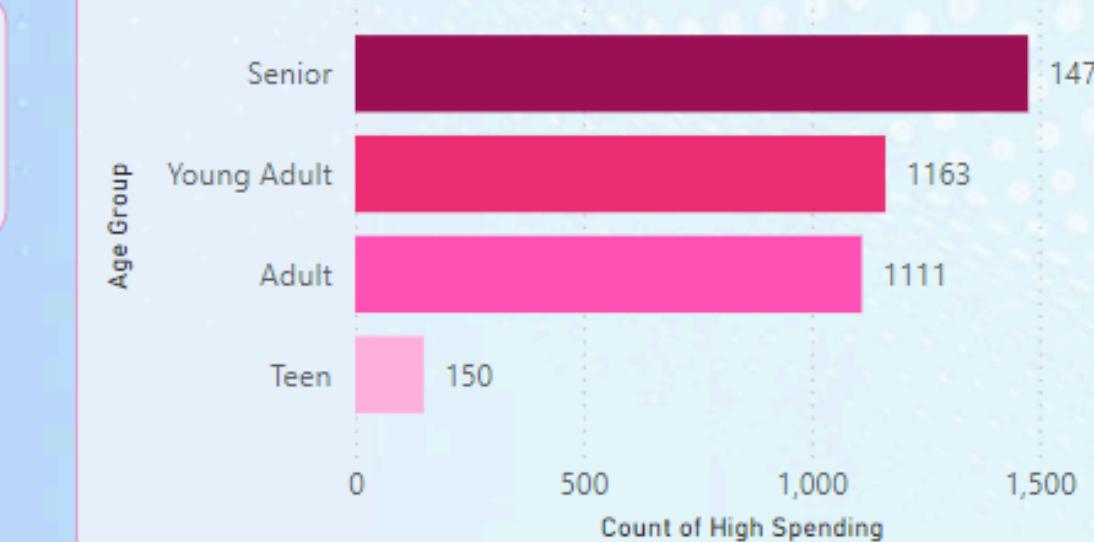
Count of Customers

3900

Avg Purchase

59.76

Count of High Spending by Age Group



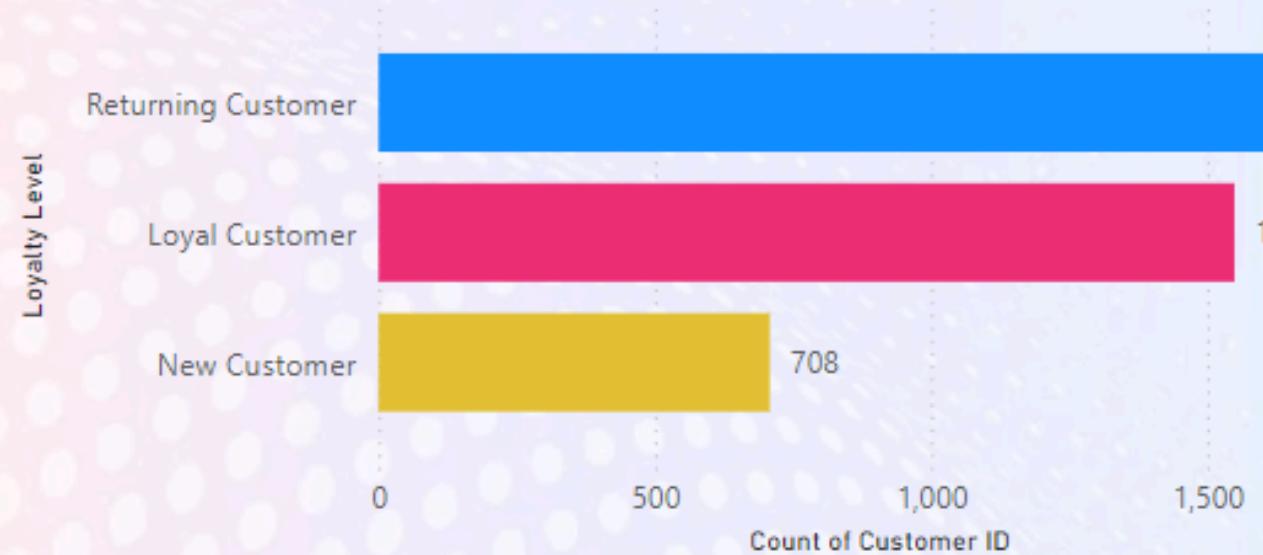
Churn Risk

Medium Risk

CLTV

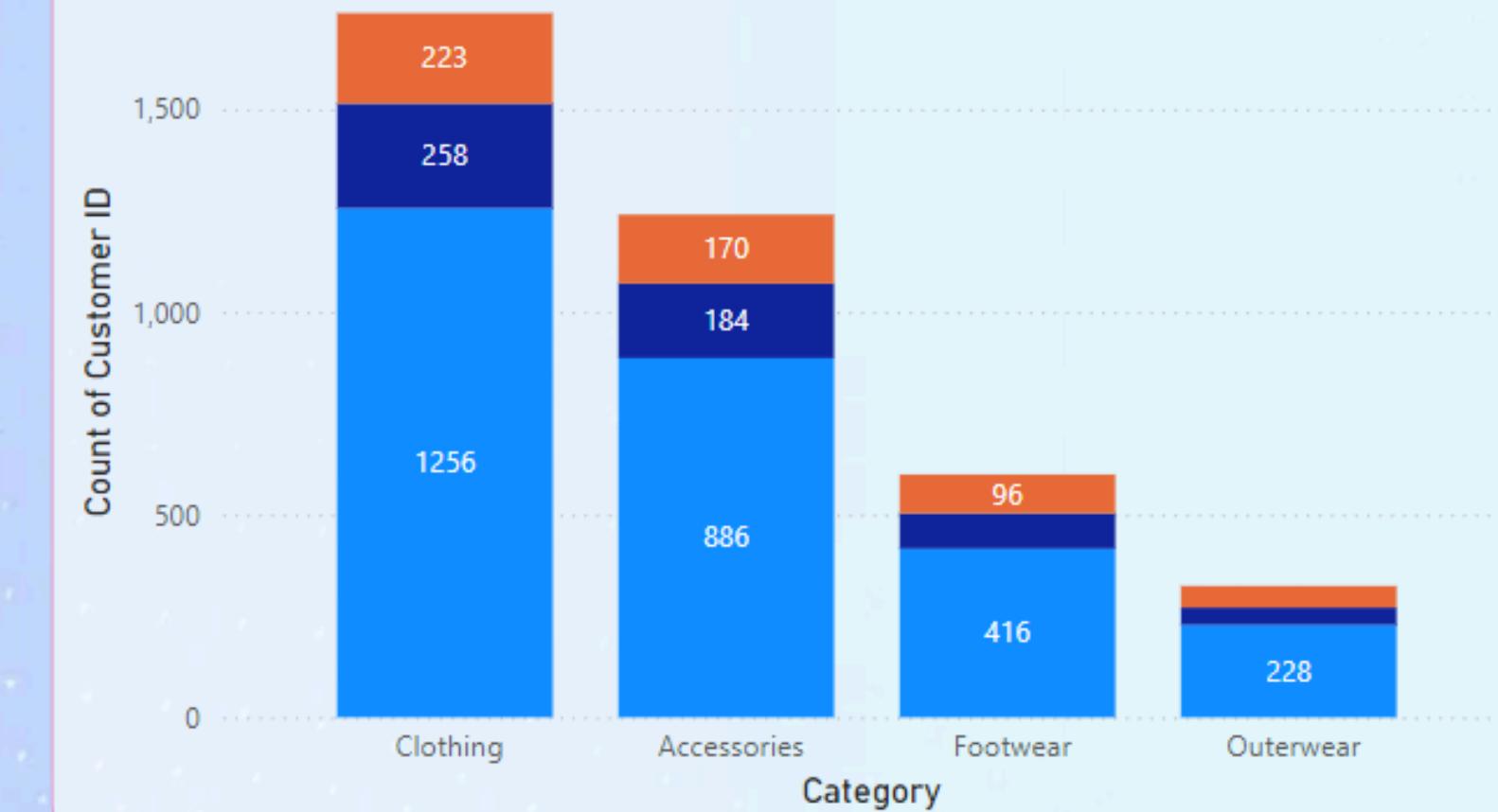
233K

Count of Customer ID by Loyalty Level



Count of Customer ID by Category and Purchase Frequency Group

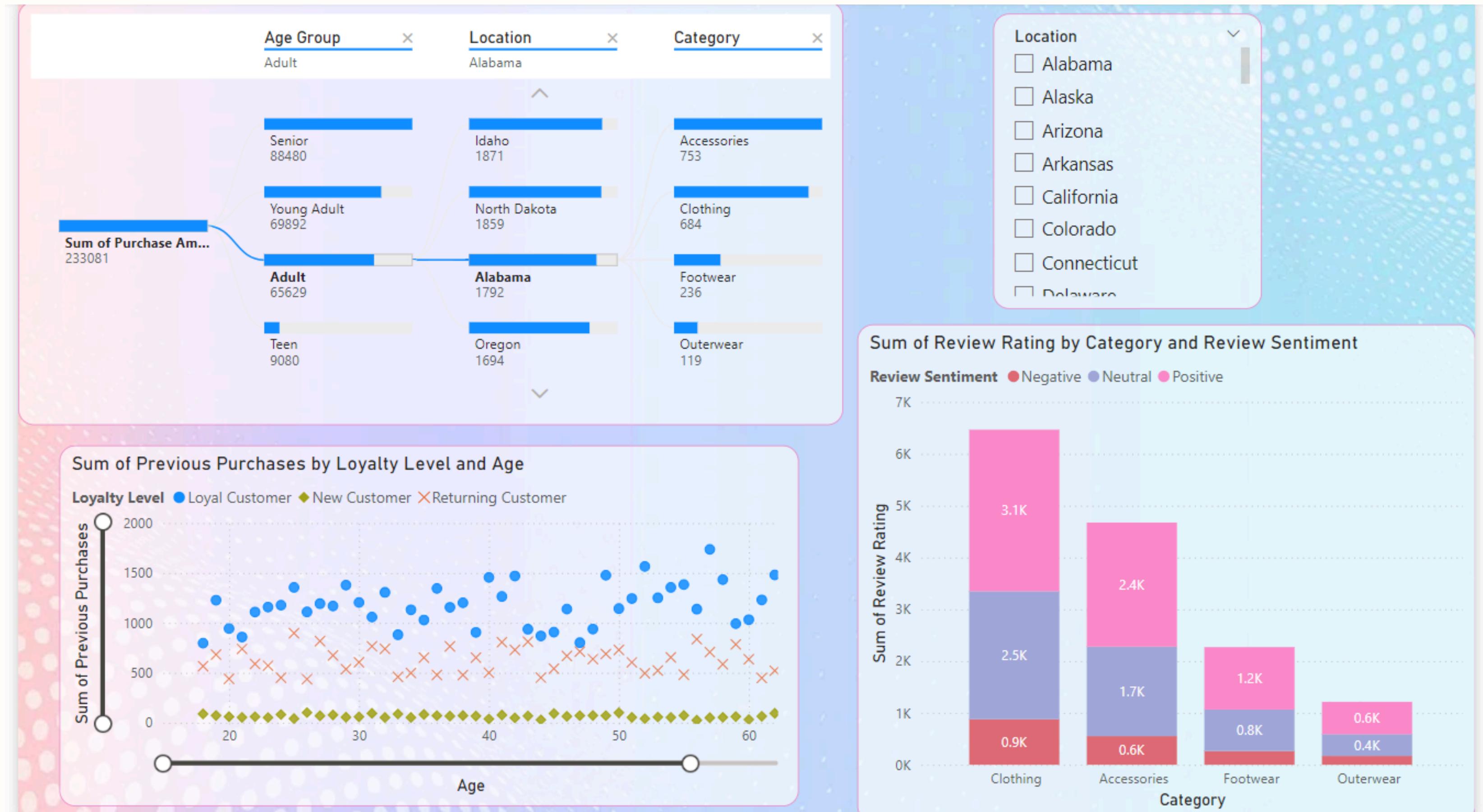
Purchase Frequency Gr... ● High Frequency ● Low Frequency ● Moderate Frequency



Dashboard



Dashboard





Key Insights and Takeaways



1

Customer Segmentation

- Identified distinct customer groups with unique purchasing behaviors and preferences.
- Enables personalized marketing strategies and better customer engagement.

2

Product Performance

- Highlighted top-performing product categories.
- Provided insights into areas of growth and underperforming segments for optimization.

3

Regional Trends

- Revealed significant variations in shopping habits and product demand across regions.
- Supports targeted regional strategies and inventory planning.

Thank You