

# Dashboard Objective

The goal of this dashboard is to:

- Track **total revenue** and category-wise performance.
  - Analyze **purchase behavior** across time, states, seasons, and product sizes.
  - Identify customer preferences by **gender, age group, and product type**.
  - Monitor revenue generated by **different payment methods**.
  - Visualize **customer counts and purchase diversity**.
- 



## Key Metrics at the Top

### 1. Total Revenue (\$57.6K)

- Compared against the goal of \$50K (+15.12%).
- This KPI provides an instant view of business performance and goal achievement.



### 2. Average Rating KPI (3.75)

- Compared with a target of 4.0.
- Useful for understanding customer experience beyond sales.



### 3. Revenue by Category

- Accessories Revenue: \$18.6K
- Clothing Revenue: \$25.7K
- Footwear Revenue: \$8.9K
- Outerwear Revenue: \$4.3K
- Displayed using simple KPI cards for quick category-level performance tracking.



## Purchase Behavior Analysis

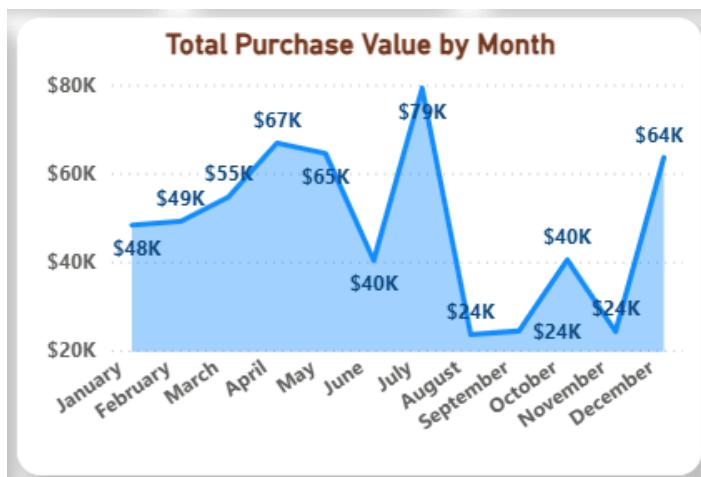
### 1. Purchase Value by Product

- A vertical bar chart listing items (T-shirt, Sweater, Sunglasses, Socks, etc.) with purchase values.
- Allows easy comparison of which product categories are driving the most sales.



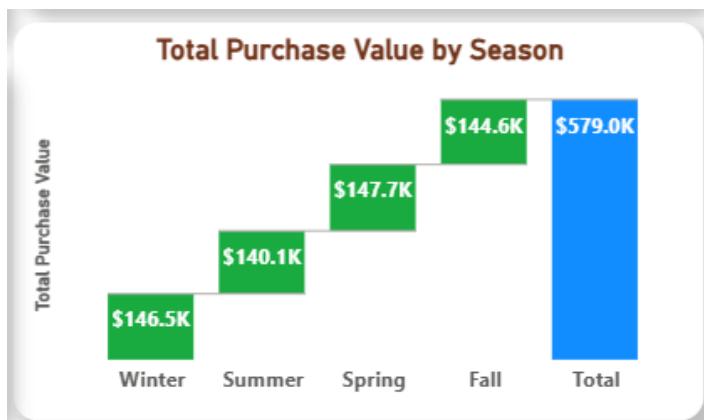
## 2. Total Purchase Value by Month

- Line chart showing revenue trends across months.
- Peaks in **April (\$67K)**, **July (\$79K)** highlight seasonal demand.



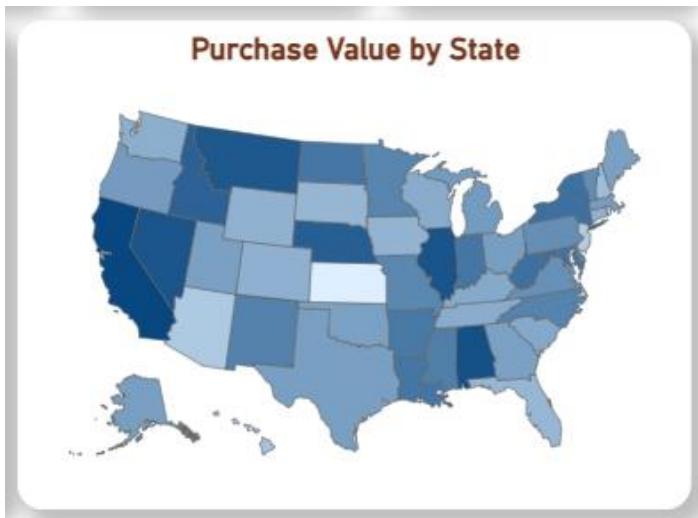
## 3. Total Purchase Value by Season

- Column chart comparing Spring, Winter, Fall, and Summer.
- **Spring (\$147.7K)** performs slightly better than Winter, Summer & Fall.



#### 4. Purchase Value by State

- Filled map visualization displaying state-wise revenue.
- Darker shades = higher purchase value.

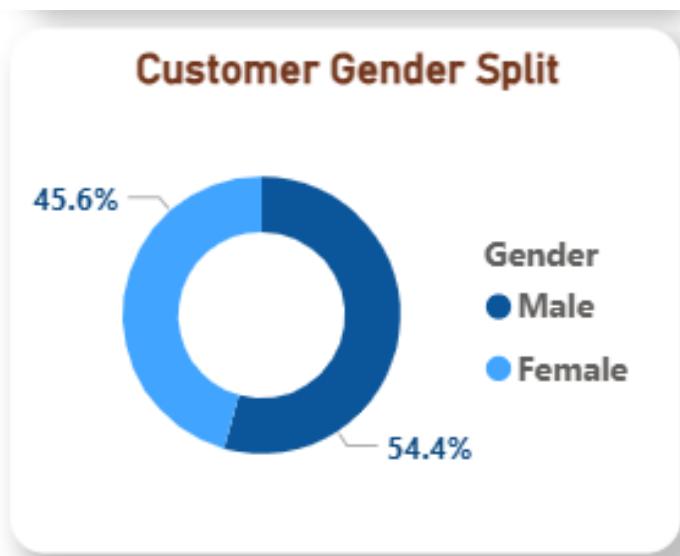


---

## 👤 Customer Insights

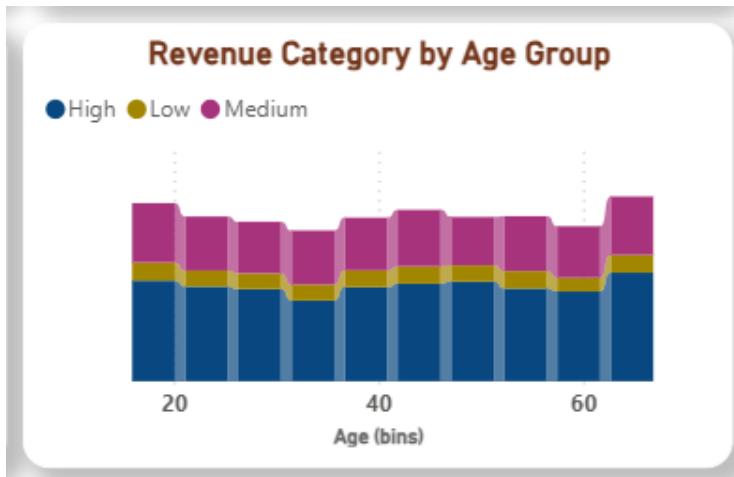
### 1. Gender Split

- Donut chart showing 54.4% Female vs. 45.6% Male buyers.
- Indicates slightly higher engagement from male customers.



## 2. Revenue Category by Age Group

- Stacked bar chart by age group (20–60 years).
- Shows contribution of Low, Medium, and High revenue customers.



## ☰ Interactive Filters (Slicers on the Right Panel)

- **Category:** Filter by product type (Clothing, Accessories, etc.).
- **Season:** View data for specific seasons.
- **Date Range:** Choose start and end dates.
- **Location:** State or region-based filtering.
- **Gender:** Male/Female analysis.
- **Color:** Filter products by customer color preference.
- **Frequency:** Purchase frequency analysis.

These slicers make the dashboard dynamic, letting users drill down into specific details.

## ❖ How You Can Build This in Power BI

### 1. Data Preparation (Excel + Python EDA)

- The raw datasets were first organized and cleaned in **Excel**.
- Performed basic formatting: column renaming, removing blank rows, removing duplicates, validating data types, correcting obvious data entry mistakes and fixing inconsistent formatting.
- After initial cleanup, the data was loaded into **Power BI Power Query**, where further transformations were applied — such as splitting/merging columns, standardizing data types, and preparing the dataset for modeling

### 2. Modeling

- Create relationships between tables (Customers, Products, Orders, Payments).
- Created **Calculated Columns** (e.g., Age Group, Purchase Category, Seasonal Labels) to support deeper insights. Built **DAX Measures** like:
  1. Total Revenue
  2. Average Rating
  3. Revenue by Category
  4. Total Purchase Value
  5. Customer Count

These measures power the KPIs and visuals on the dashboard.

### 3. Visualizations & Business Insights

- **KPI Cards** used for Total Revenue, Average Rating, and Category-Level Revenue.
- **Bar / Column Charts** used to compare product categories, age groups and seasonal trends.
- **Line Charts** visualized monthly or time-series purchase values.
- **Filled Maps** highlighted purchase performance across different states.

- **Donut / Pie Charts** showcased customer gender distribution.

## 4. Formatting & Design

- Clean themes and color palettes were selected to ensure a consistent visual experience across all reports.
  - **Slicers** were added in Power BI for quick filtering by category, season, date, state, gender, size, and color.
  - Visuals were aligned and spaced for clarity, and unnecessary gridlines/labels were removed for a clean, storytelling-focused layout.
  - Excel's structured data ensured that Power BI visuals refresh smoothly as new data is added.
- 



## Conclusion

This **Customer Purchase Behavior Analysis Dashboard** delivers a comprehensive view of overall sales performance, customer demographics, seasonal demand trends, and satisfaction levels. By integrating KPIs, interactive charts, geographic maps, and dynamic slicers, the dashboard enables decision-makers to:

- Identify high-performing products and categories with precision.
- Understand customer preferences across size, gender, and color segments.
- Track performance patterns across time periods, seasons, and locations.
- Strengthen sales, marketing, and inventory strategies using data-backed insights.

Overall, the dashboard acts as a central decision-support tool, helping businesses optimize operations, improve customer targeting, and drive better outcomes.