

# **Retail: Accelerating the Sales of Urban Edge Apparel**

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# Agenda

- 1. Data Visualization & Data Analysis**
- 2. Product Performance**

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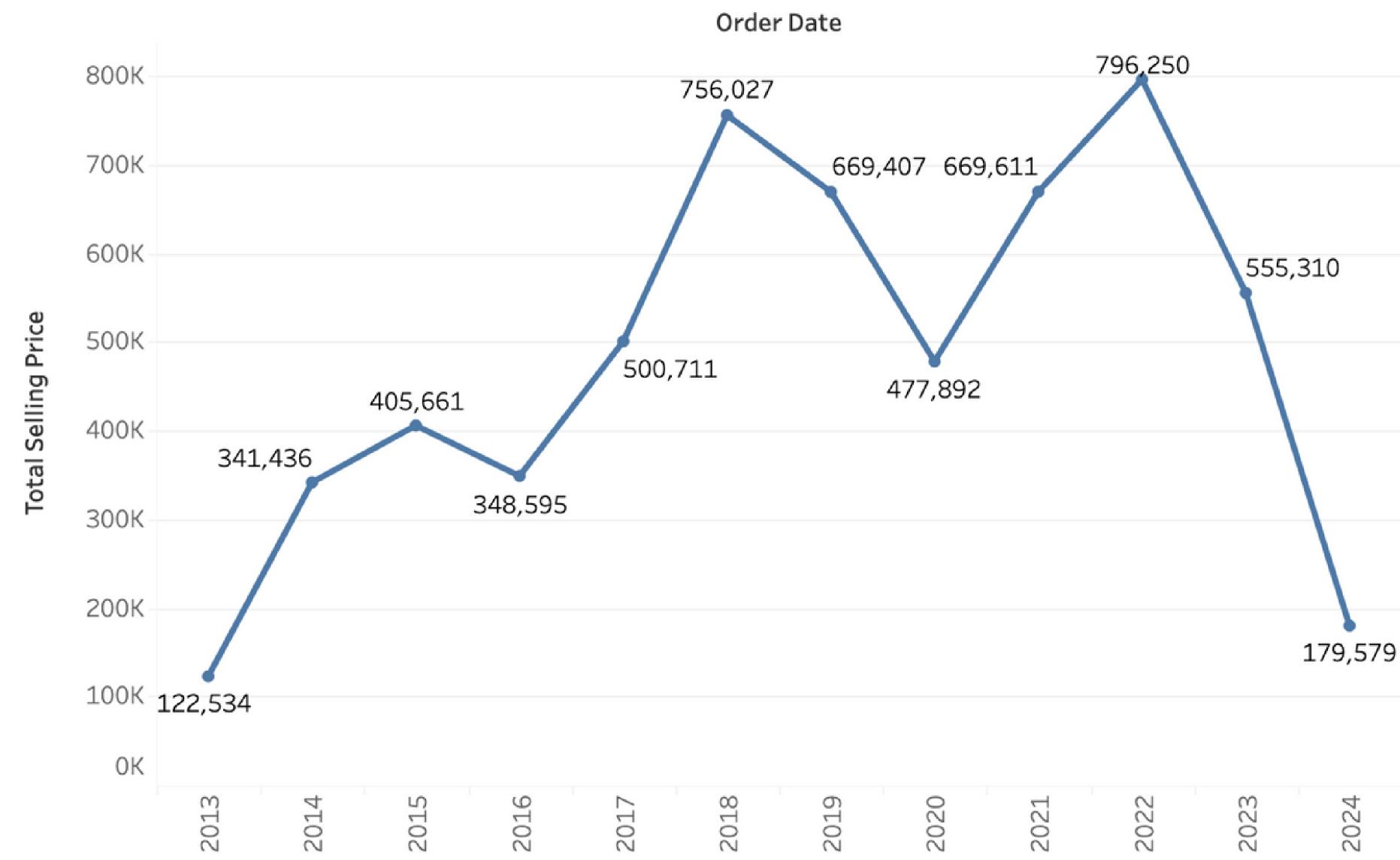


# **Data Visualization & Data Analysis**

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## Changes in Customer Purchasing Habits Over the Years

Annual Total Sales



Big changes over  
2018, 2020, 2022 and 2024

**2018: Sharp increase,**  
reaching a peak at 756,027.

**2020: Turning point**  
reaching 477,892.

**2022: New Peak,**  
recovery to 796250.

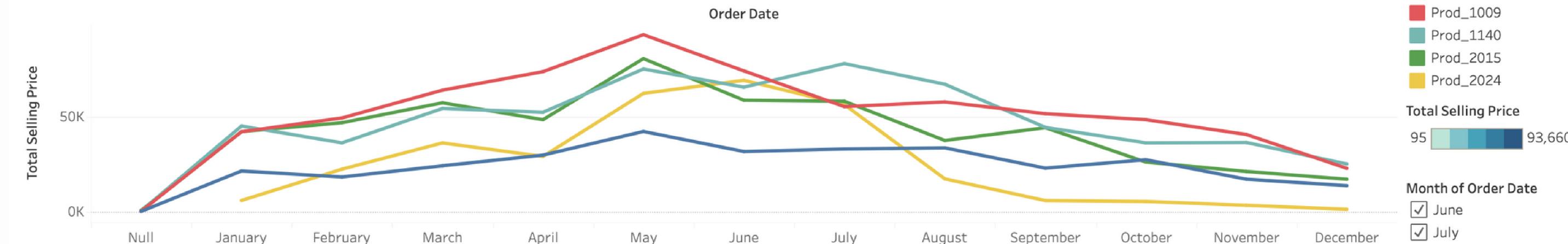
**2024: Steep drop,**  
reaching 179,579.

# Data Analysis

Through Annual Total Sales and Annual Number of Unique Orders, we can see that sales trends and fluctuations are very obvious, with both growth and decline periods. The continuous growth of Annual Total Sales and Annual Number of Unique Orders from 2013 to 2018 indicates that Urban Edge Apparel has implemented effective marketing to enhance brand awareness and attract customers. The decline from 2018 to 2020 is very likely because the COVID-19 epidemic has significantly impacted the global economy, leading to reduced consumer spending and disruption of brand supply chains. From 2020 to 2022, the sales volume rebounded to the bottom and reached the peak of Annual Total Sales. The sales volume rebounded significantly with the promotion of the COVID-19 vaccine and the recovery of economic activities. However, from 2022 to 2024, annual total sales and annual numbers of unique orders have been downward, which may be affected by economic recession, intensified market competition, unstable supply chains, and other factors.

## Seasonality in Purchases for Top Products

Monthly Sales Trends for Top Products



Monthly Sales Heat Map for Top Products



- June
- July
- August
- September
- October
- November
- December

**Monthly Sales Trends for Top Products (Line Chart):** This line chart shows the monthly sales trends for top products, making it easy to spot seasonal patterns for each product.

**Monthly Sales Heat Map for Top Products (Heat Map):** This heat map shows the intensity of sales per month for top products, highlighting peak

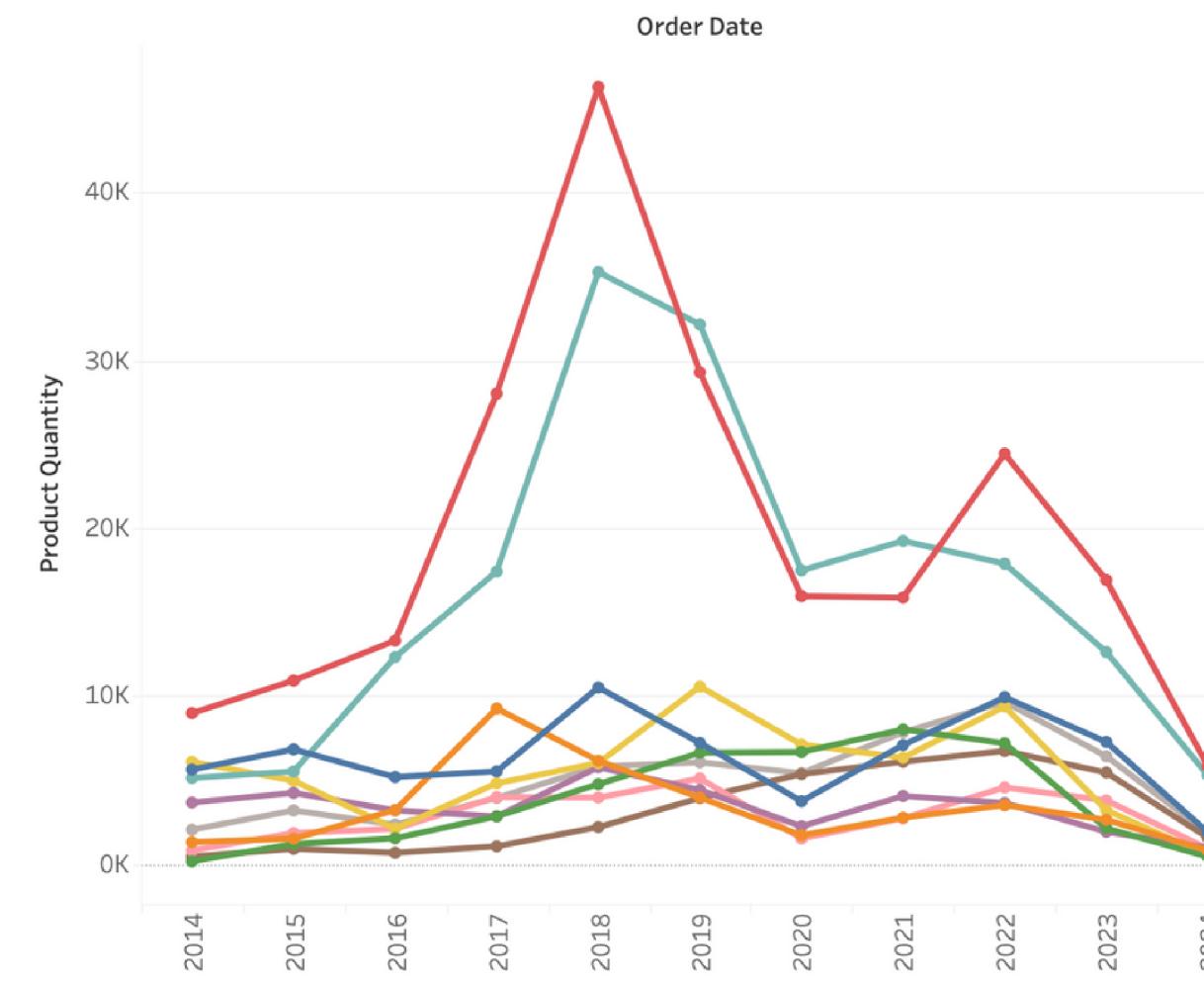
**Prod\_1009, Prod\_1140, Prod\_2015**  
is seasonality in purchases.(Based on plot below)

# Data Analysis

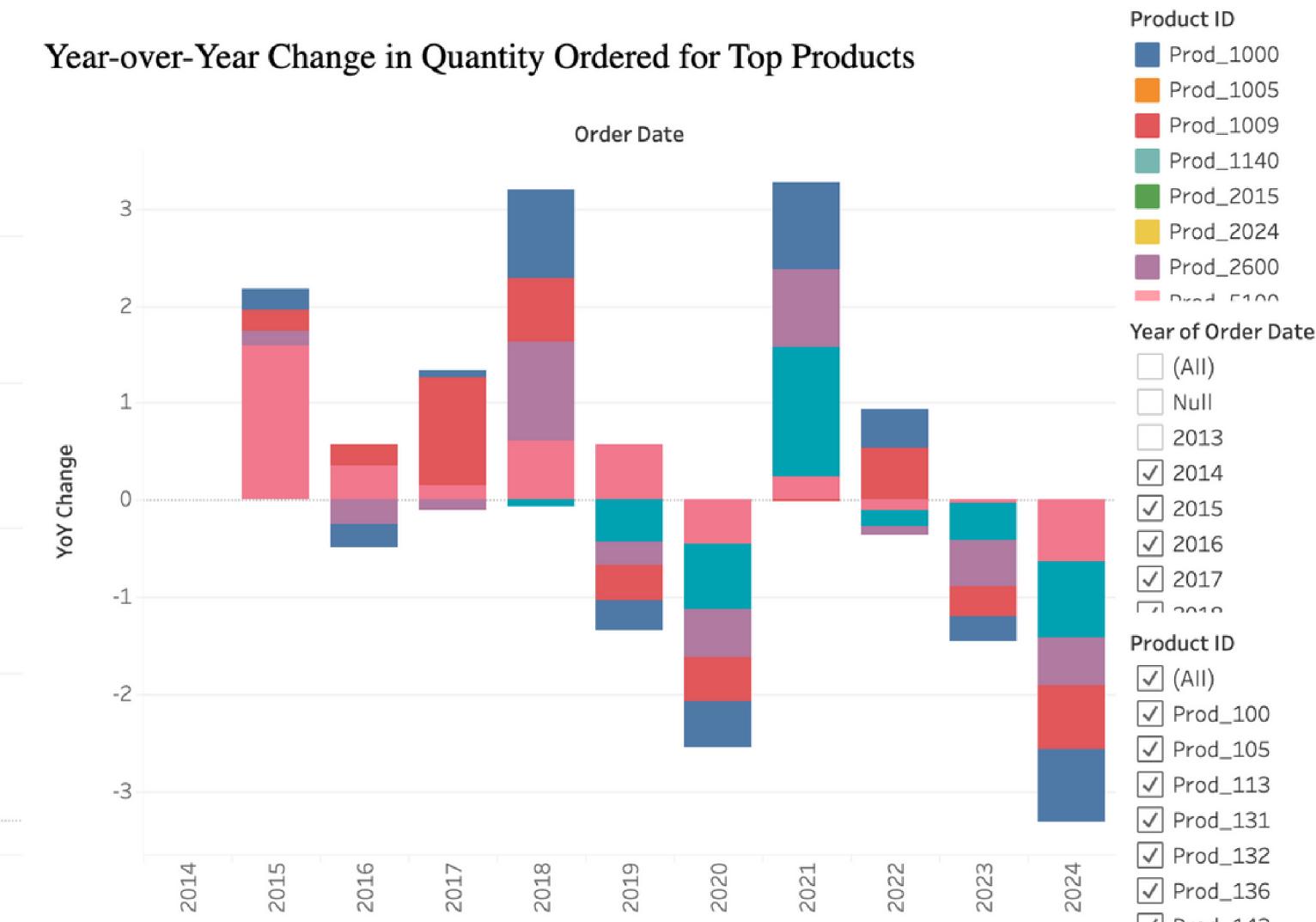
Through the line chart and heat map, we can see that there is indeed seasonality in the sales of certain products. For example, Prod\_1000 and Prod\_1009 sell well in spring and early summer, Prod\_1140 sells well in summer and autumn, and Prod\_2015 and Prod\_2024 sell well in summer. Overall, all product sales remained relatively stable in the first few months of the year, gradually increasing from March and reaching a peak from May to July. The product sells well in spring and summer, with peak sales periods, which may be related to seasonal needs, specific events, and brand style. Urban Edge Apparel can develop more targeted marketing strategies based on these seasonal trends. Increase inventory and promotional activities during peak sales periods to maximize sales.

## Trends in Quantity Ordered for Top Products

Annual Quantity Ordered Trends for Top Products



Year-over-Year Change in Quantity Ordered for Top Products



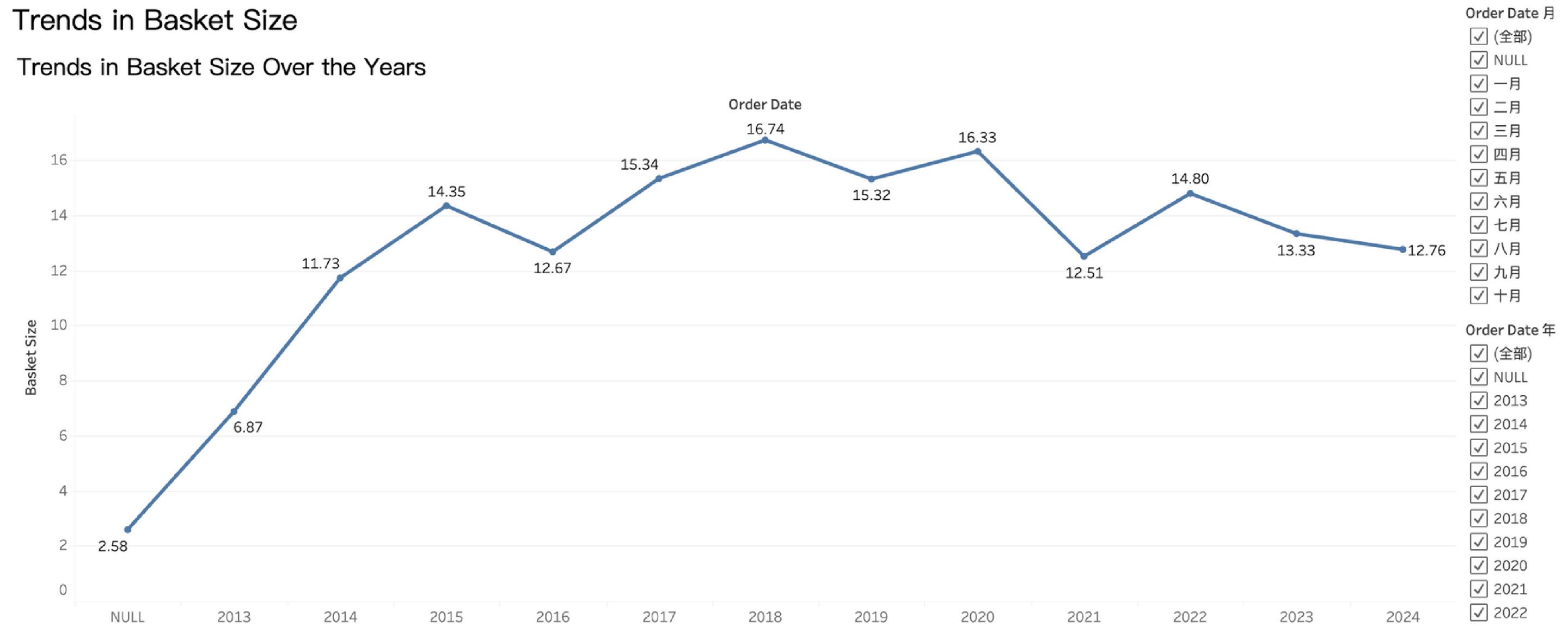
**Prod\_1009** and **Prod\_1140** has a significant increase or decrease in quantity ordered.

# Data Analysis

Prod\_1009 significantly increased product quantity between 2016 and 2018, followed by a sharp decrease in product quantity from 2018 to 2020. After a brief increase, it dropped to 5826 product quantities in 2024. The product quantity of Prod\_1140 significantly increased between 2017 and 2018 and gradually decreased after 2018. The annual quantity of other products is relatively stable, with no significant growth or decrease trend. The product quantity of Prod\_1009 and Prod\_1140 significantly increased from 2016 to 2018 and 2021 to 2022, showing significant year-on-year growth. They showed negative year-on-year growth from 2018 to 2020 and 2023 to 2024. For products like Prod1009 and Prod1140, which have significantly increased product quantity in specific years, the company should analyze the reasons for the surge in sales and consider increasing production and inventory. At the same time, the company needs to analyze the reasons for the significant decrease in product quantity and take corresponding measures. In addition, stable products can serve as a reliable source of revenue for the company.

## Trends in Basket Size

### Trends in Basket Size Over the Years



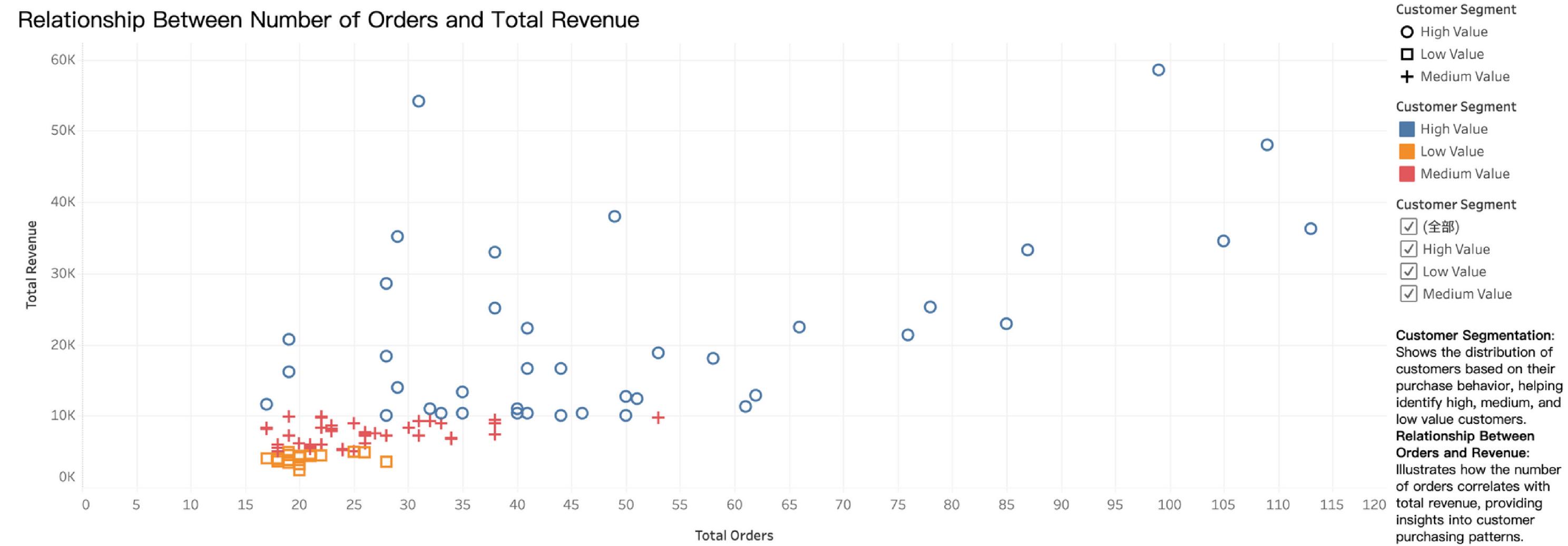
The size of baskets has an overall growth trend From 2013 to 2020, fluctuated and declined after 2020.

# Data Analysis

From 2013 to 2020, the size of baskets increased from 2.58 to 16.33, showing an overall growth trend, indicating that the number of products purchased by customers is increasing yearly. This may reflect an increase in customer purchasing power or demand for Urban Edge Apparel products. After 2020, the size of baskets has fluctuated and declined, possibly due to intensified market competition, fluctuations in economic conditions, and changes in consumer behavior. The company needs to analyze the reasons further, understand the shopping habits and changing needs of different customer groups, and develop strategies such as launching more aggressive promotional activities during a declining basket to encourage customers to increase their purchase volume.

## Customer Insights

Relationship Between Number of Orders and Total Revenue



The total orders are positively correlated with total revenue.

# Data Analysis

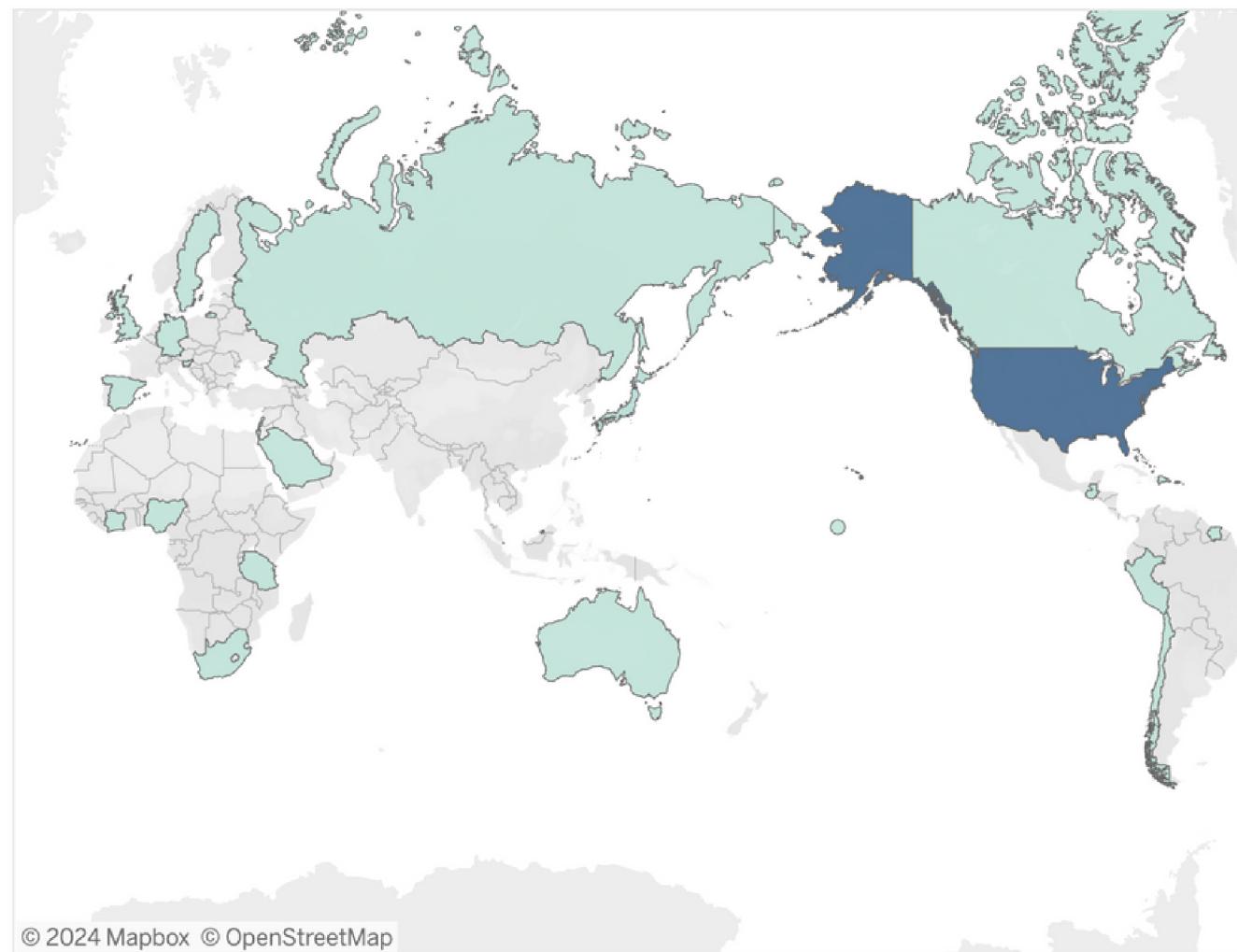
High-value customers typically place a large number of orders, ranging from 15 to 115. Their total revenue is also relatively high, ranging from \$10k to \$60k. Since high-value customers contribute the most to the company's revenue, the company should focus on them and develop targeted service and marketing plans to maintain and increase their loyalty and purchase frequency.

The total orders and total revenue generated by medium-value customers are at a moderate level, with orders mainly concentrated between 15 and 55 and total revenue mostly ranging from \$5k to \$10k. The company can transform medium-value customers into high-value customers as much as possible by improving product quality and enhancing their purchasing experience and satisfaction.

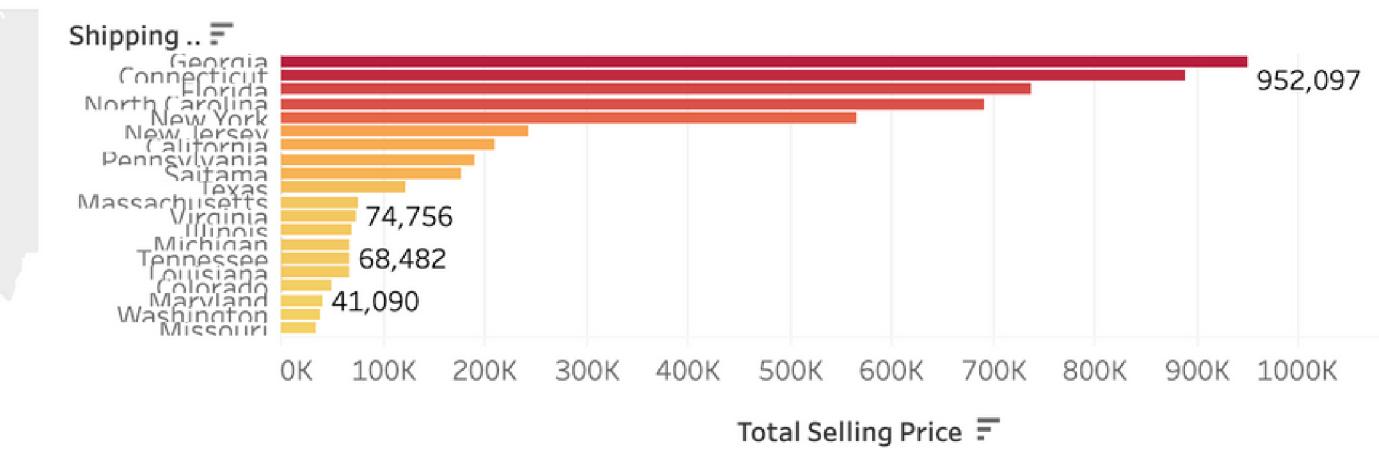
The number of orders and total revenue for low-value customers are relatively low, with most orders below 25 and total revenue mainly below \$5000. The company can maintain contact with them, maintain their customer base, and try to increase their purchase frequency and order size through low-cost marketing and service strategies.

## Geographical Sales Analysis Dashboard

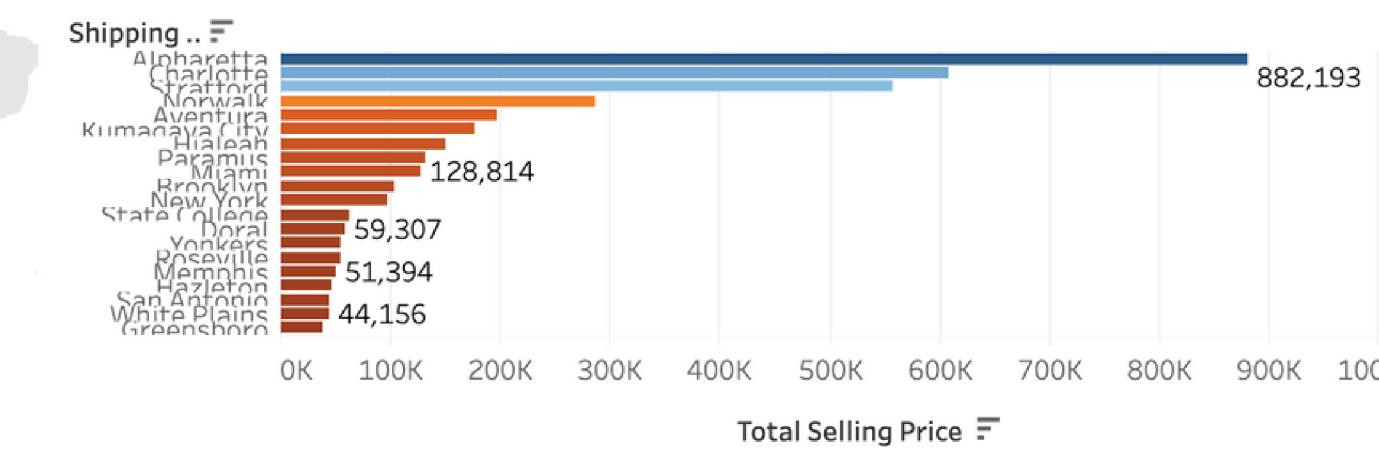
Distribution of Sales by Country



Distribution of Sales by State



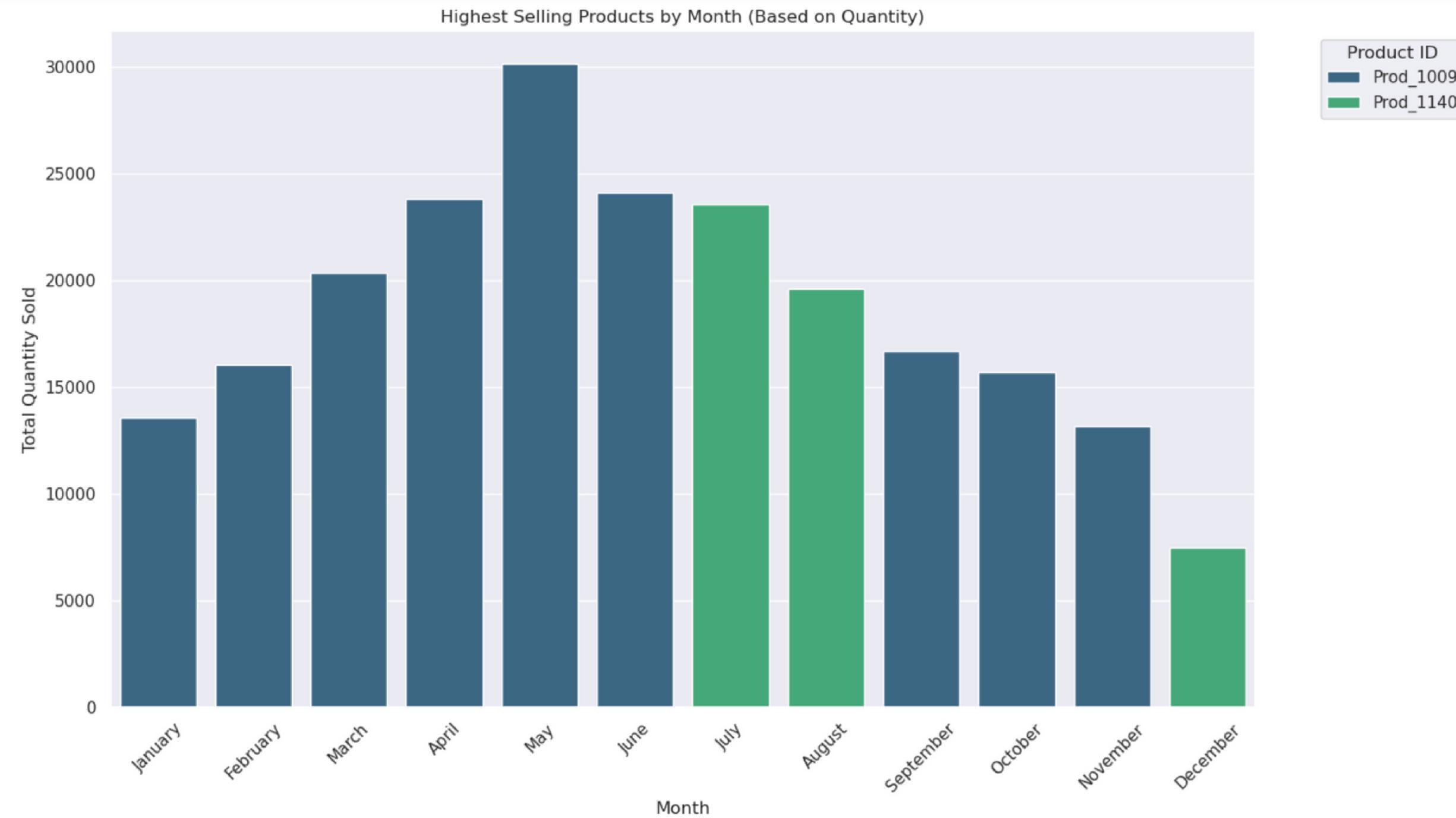
Distribution of Sales by City



The United States has the highest sales in the national sales distribution. States with high sales, such as Georgia and Connecticut, and cities like Alpharetta and Charlotte, show high product demand.

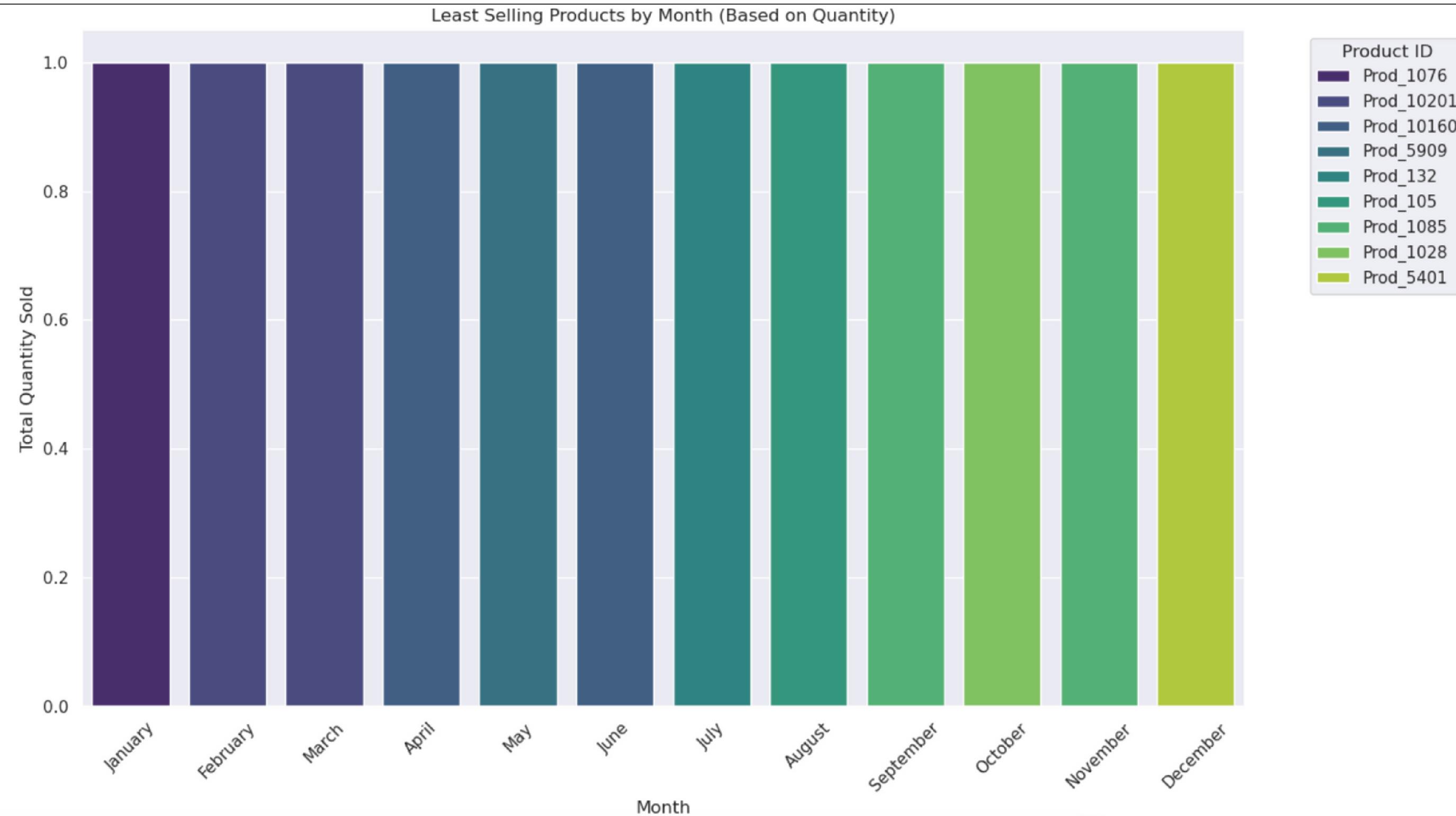
# Data Analysis

The United States has the highest sales in the national sales distribution, reaching \$5599736, indicating that this is the main market for Urban Edge Apparel. The lower sales in some countries in Europe, Australia, and Africa indicate a certain demand for the company's products. States with high sales, such as Georgia and Connecticut, and cities like Alpharetta and Charlotte, show high product demand. So the company can further consolidate its market position by increasing marketing and sales efforts, optimizing supply chains, and improving customer satisfaction. It also can conduct market research on other countries, states, and cities with lower sales, understand local market demands, and develop targeted marketing strategies. More modern methods, such as cross-border e-commerce for cross-border trade and brand promotion, can enhance global market influence and exposure. At the same time, the company can open up more markets in other countries, such as Asia, which has a large population base and huge market potential.



The highest selling products by month are:  
**Prod\_1009 and Prod\_1140**

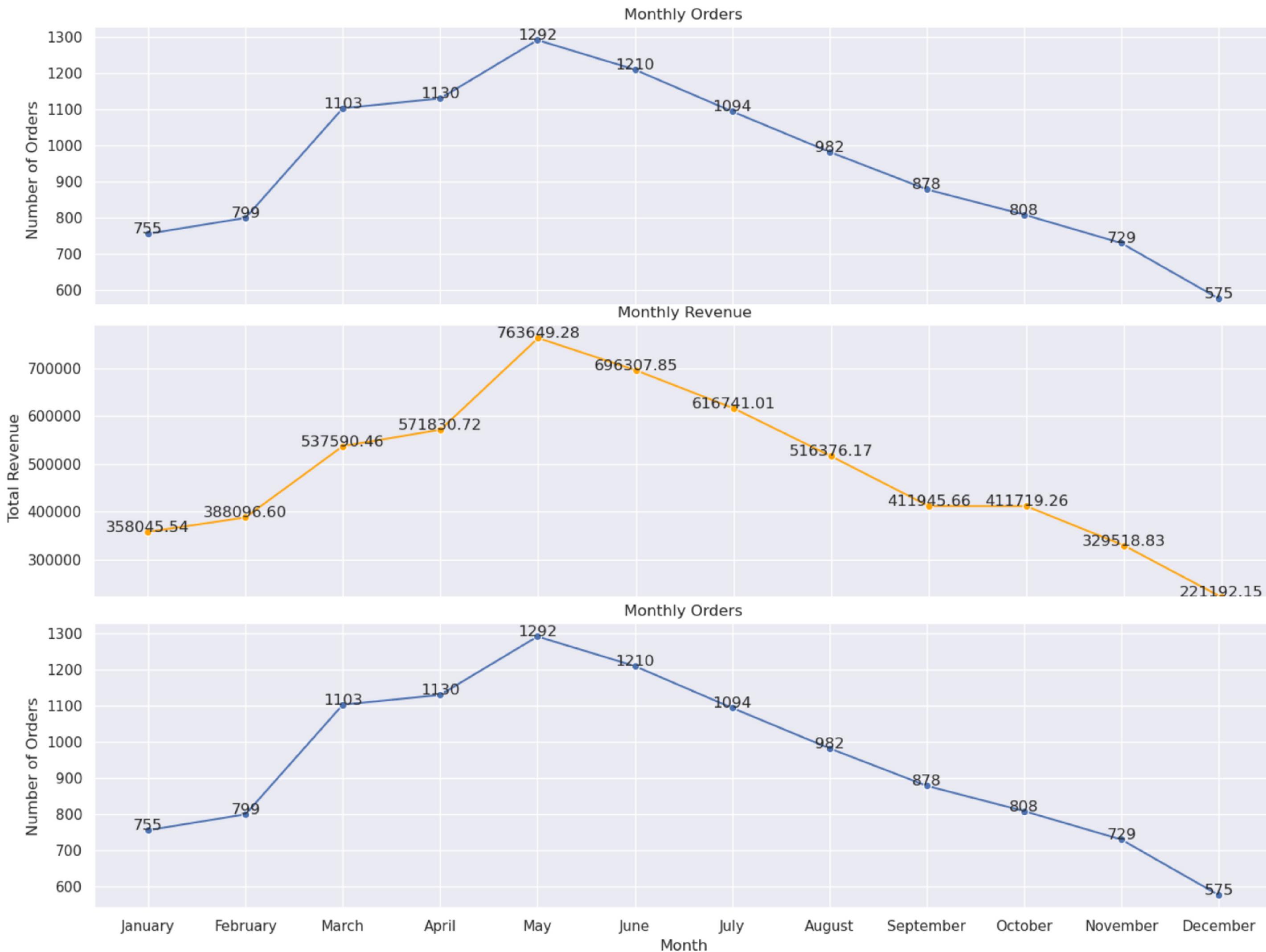
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The least selling products by month are:  
**Prod\_1076, Prod\_10201, Prod\_10160, Prod\_5909 and Prod\_132, Prod\_105,  
Prod\_1085, Prod\_1028, Prod\_5401**

# Orders, Revenue, Quantity by Month

Orders, revenue quantity with respect to number of orders gradually increase until May, then number of orders reach peak in May. After May, it get decreasing.



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# **Product Performance**

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# Product Performance

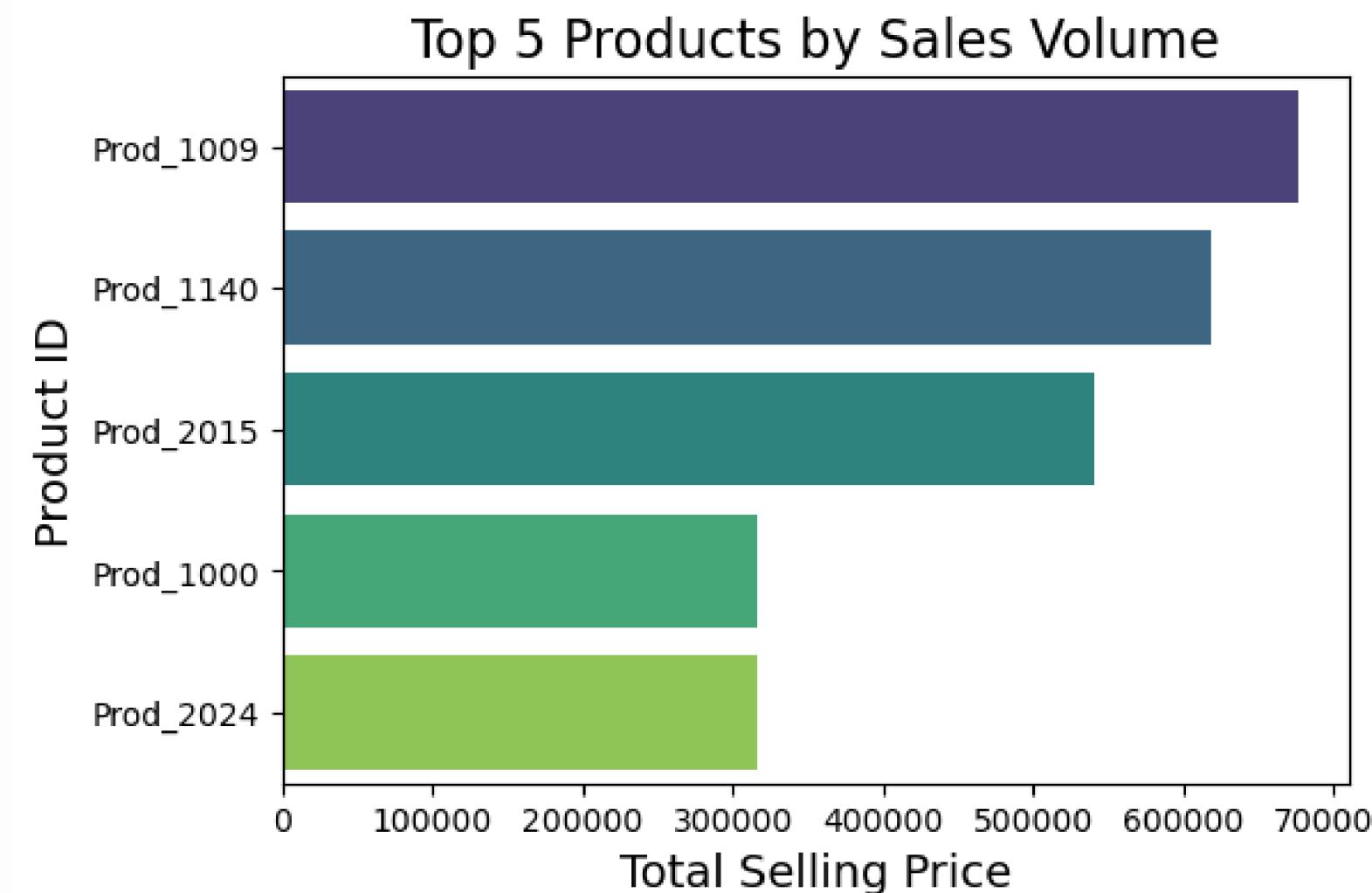
To rank our products based on performance and guide strategic focus, we developed a comprehensive metric

## Metric Formulas:

- Sales Volume: Calculated the total selling price for each product.
- Average Sales Growth Rate: Computed the monthly sales growth rate and averaged it for each product.
- Quantity Sold Index: Normalized the monthly quantity sold and averaged it for each product.
- Average Selling Price: Determined by dividing the total selling price by the total quantity sold.
- Geographic Reach
  - Counted the number of unique states each product was shipped to.
  - Counted the number of unique countries each product was shipped to.
- Customer Reach: Tallied the number of unique companies that purchased each product.
- Completion Rate: Calculated the proportion of completed orders out of total orders for each product.

# Sales Volume

Sales volume refers to the total revenue generated from selling a product over the whole time.

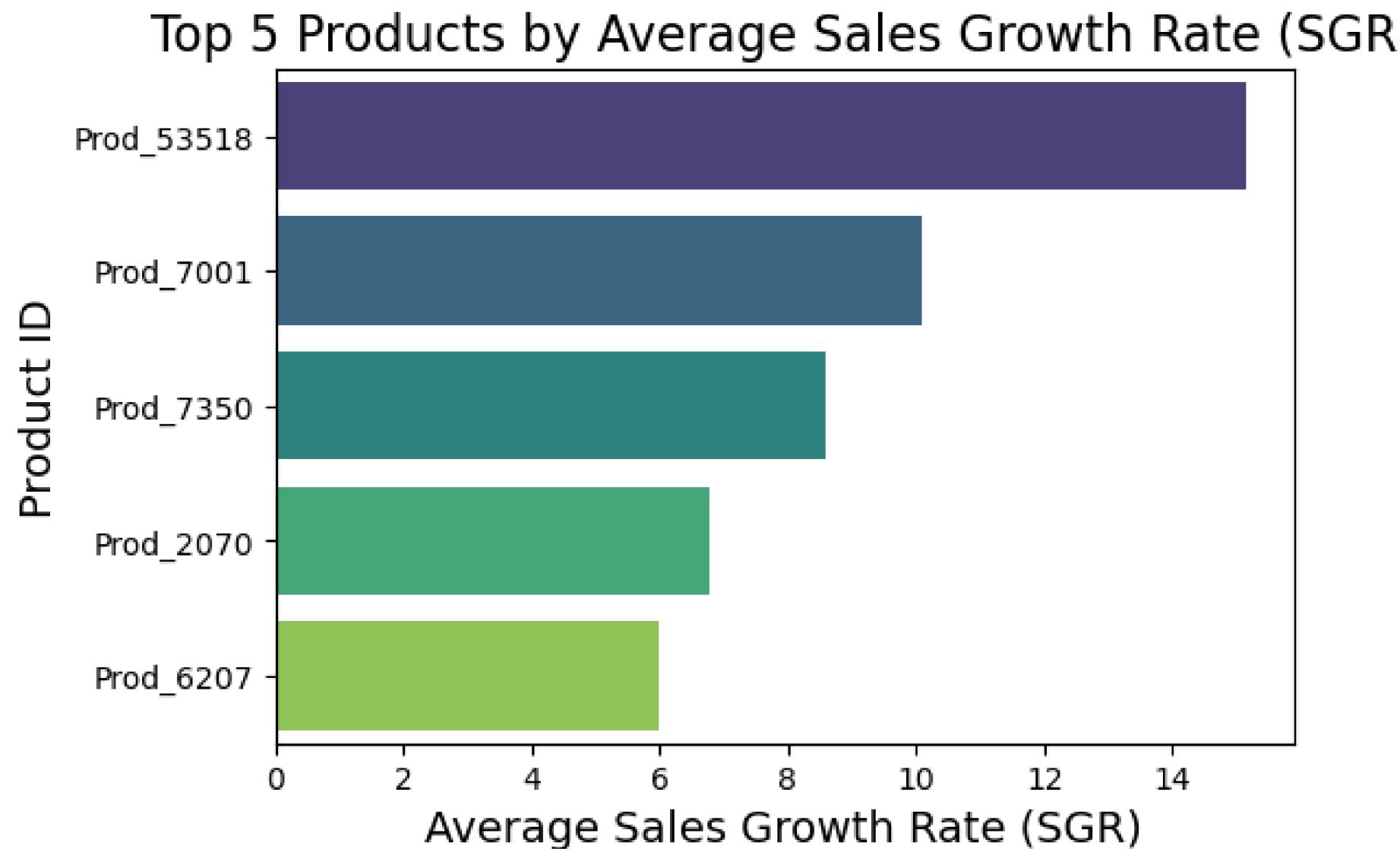


Performance Weight: 0.25

High Impact: Directly correlates with revenue and market demand. Products with higher sales volumes generate more revenue and indicate strong market presence.

# Sales Growth Rate

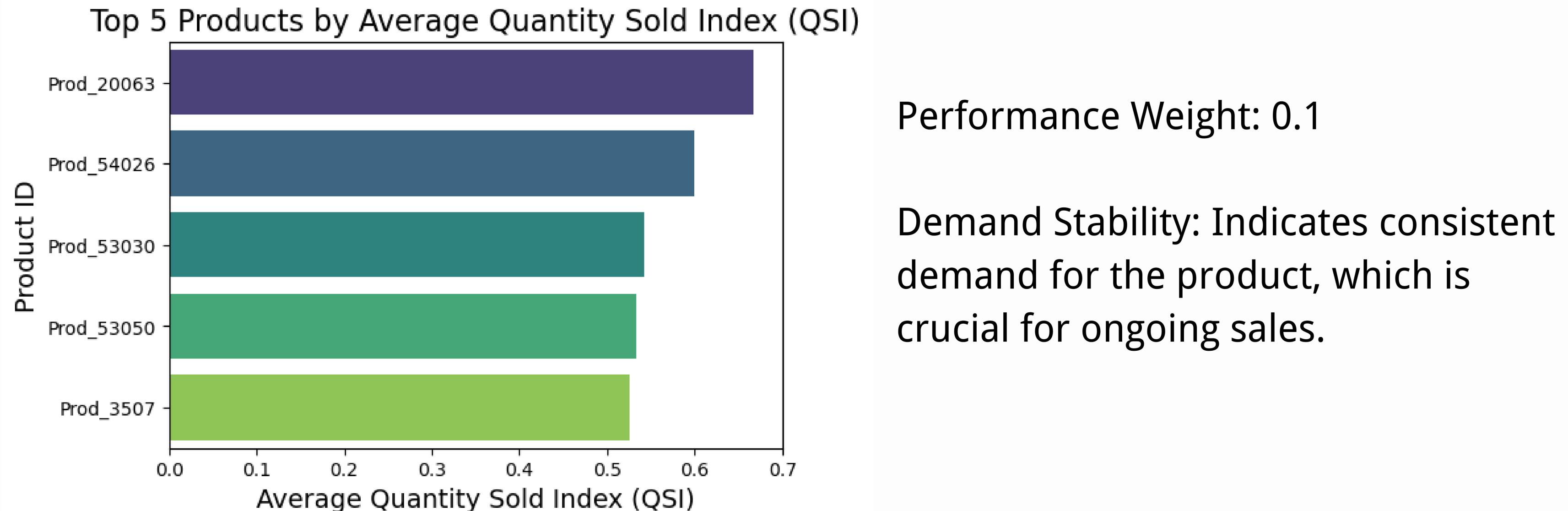
Sales Growth Rate measures the increase in a product's sales revenue over time.



Trend Indicator: Reflects how the product is performing over time. Steady growth indicates increasing market acceptance and potential for future success.

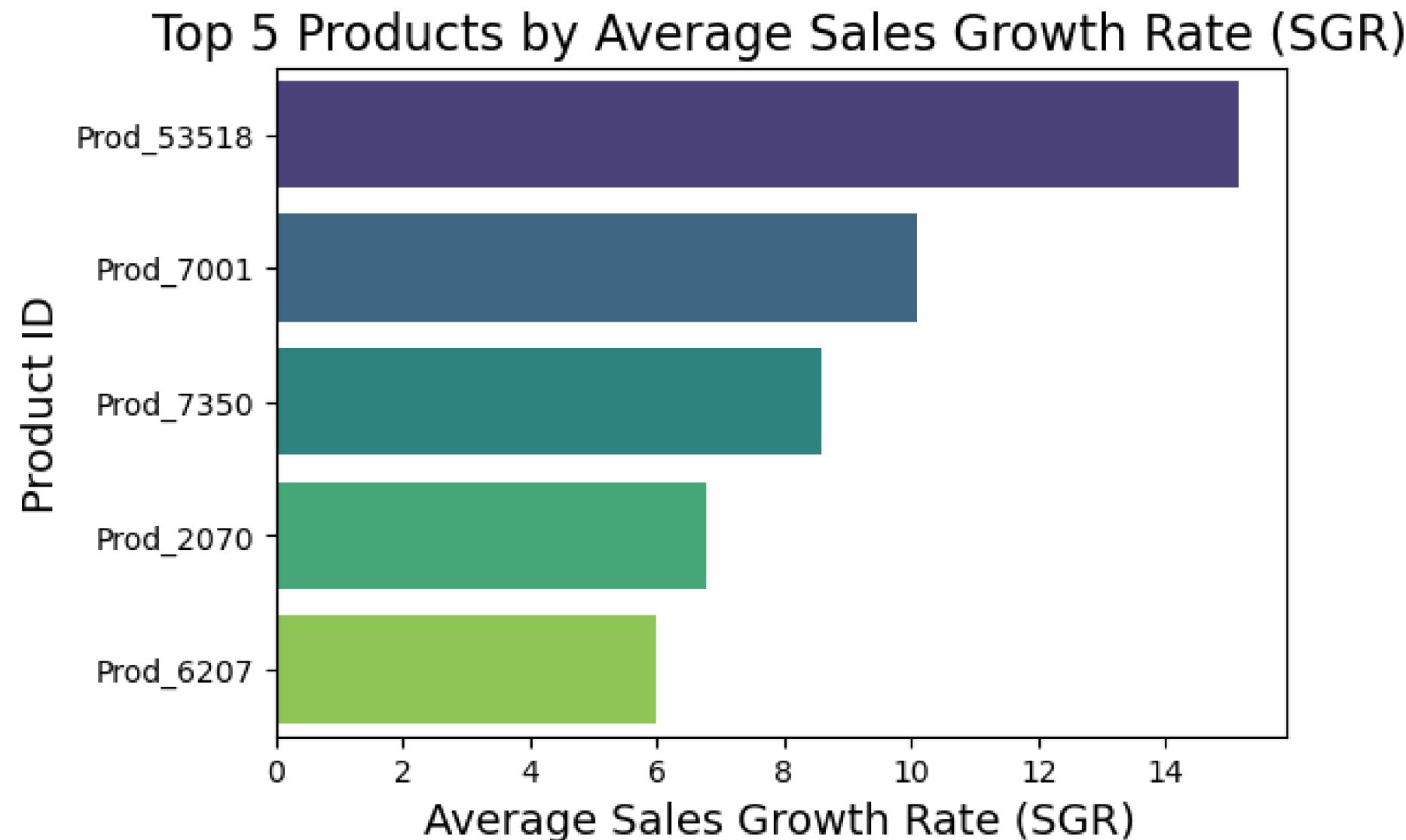
# Quantity Sold

Quantity Sold refers to the total number of units of a product sold over a month.



# Average Selling Price

Average Selling Price (ASP) refers to the average price at which a product is sold over a specific period.

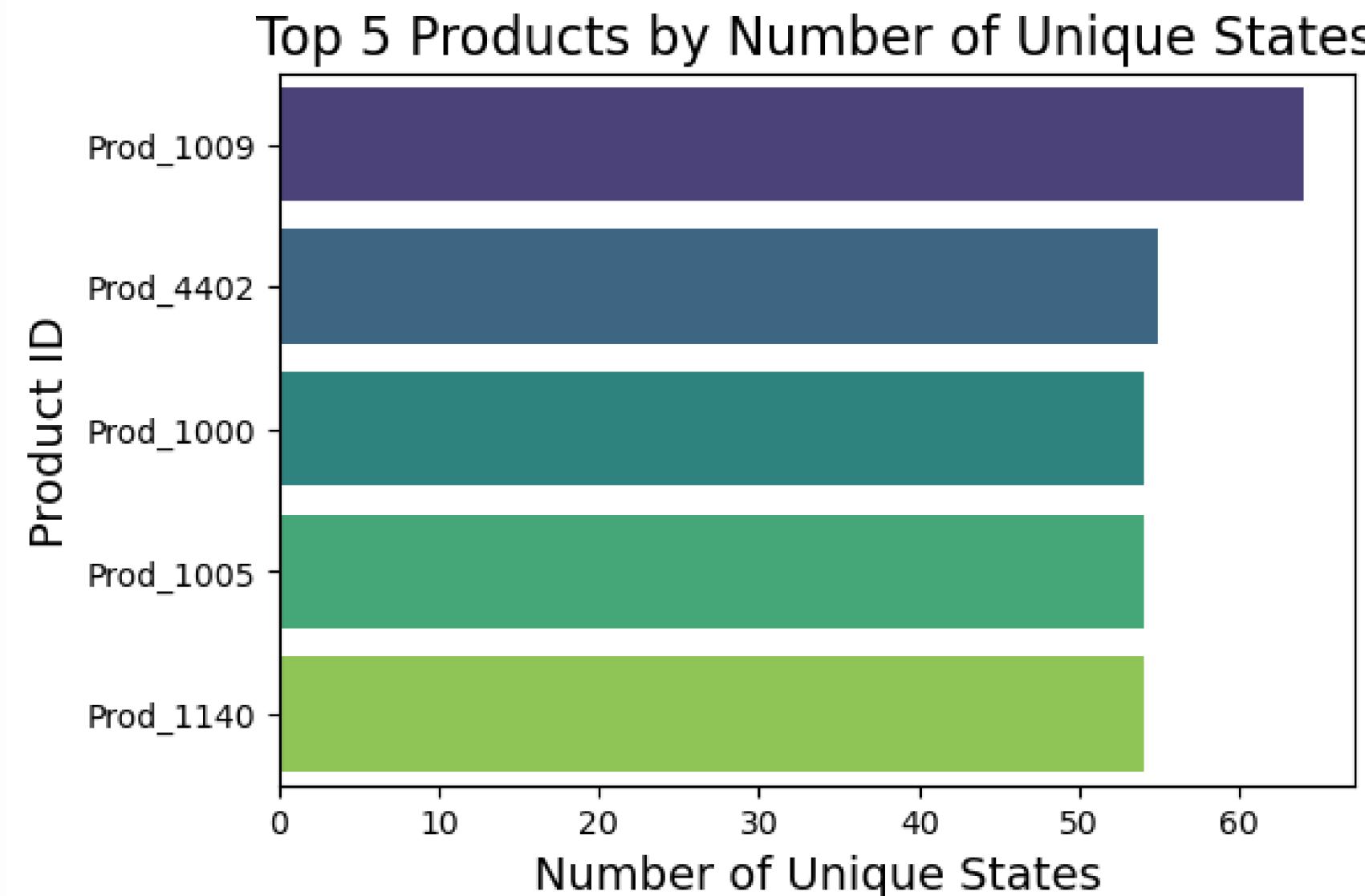


Performance Weight: 0.1

Profitability: Higher selling prices can lead to greater profitability per unit sold, making it an important metric.

# Number of Unique States Sold

The Number of Unique States Sold refers to the total number of different states where a product has been sold.

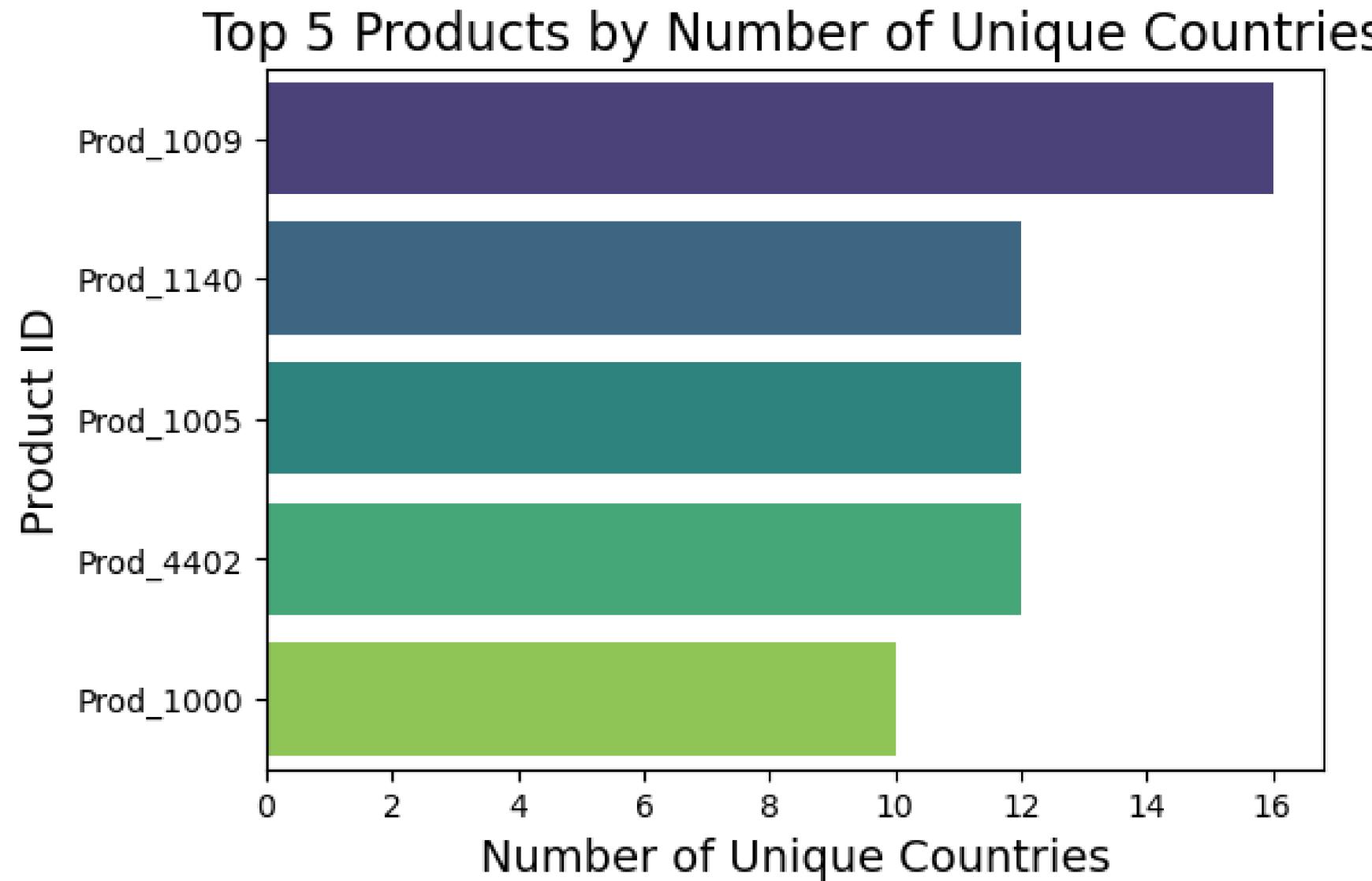


Performance Weight: 0.1

Geographic Reach: Shows market penetration within a country, indicating broader acceptance and distribution capabilities.

# Number of Unique Countries Sold

The Number of Unique Countries Sold refers to the total number of different countries where a product has been sold.

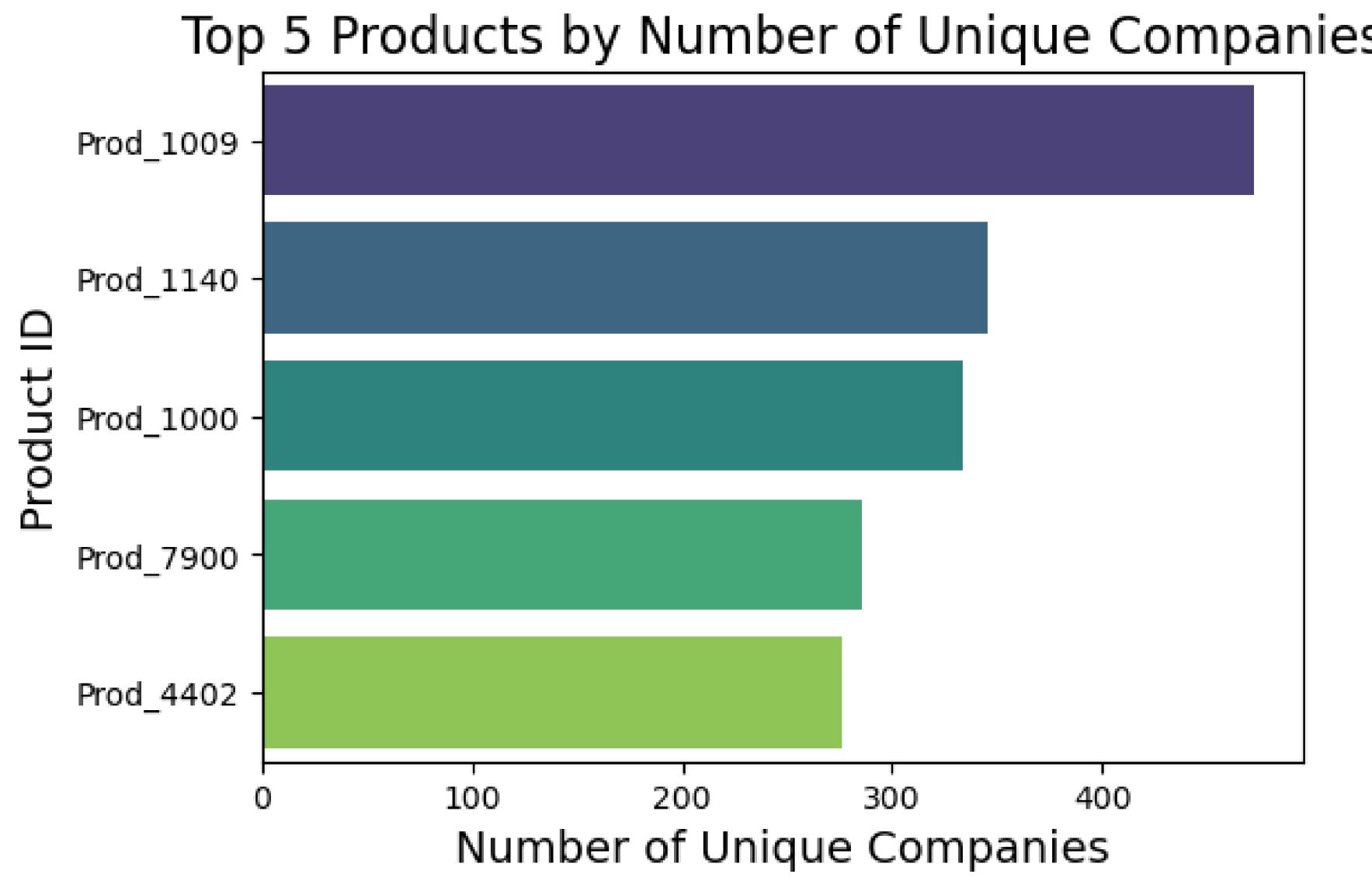


Performance Weight: 0.1

International Reach: Similar to states, but indicates global market penetration and acceptance, which is vital for products aiming for international markets.

# Number of Unique Companies Sold

The Number of Unique Companies refers to the total number of distinct companies that have purchased a product.

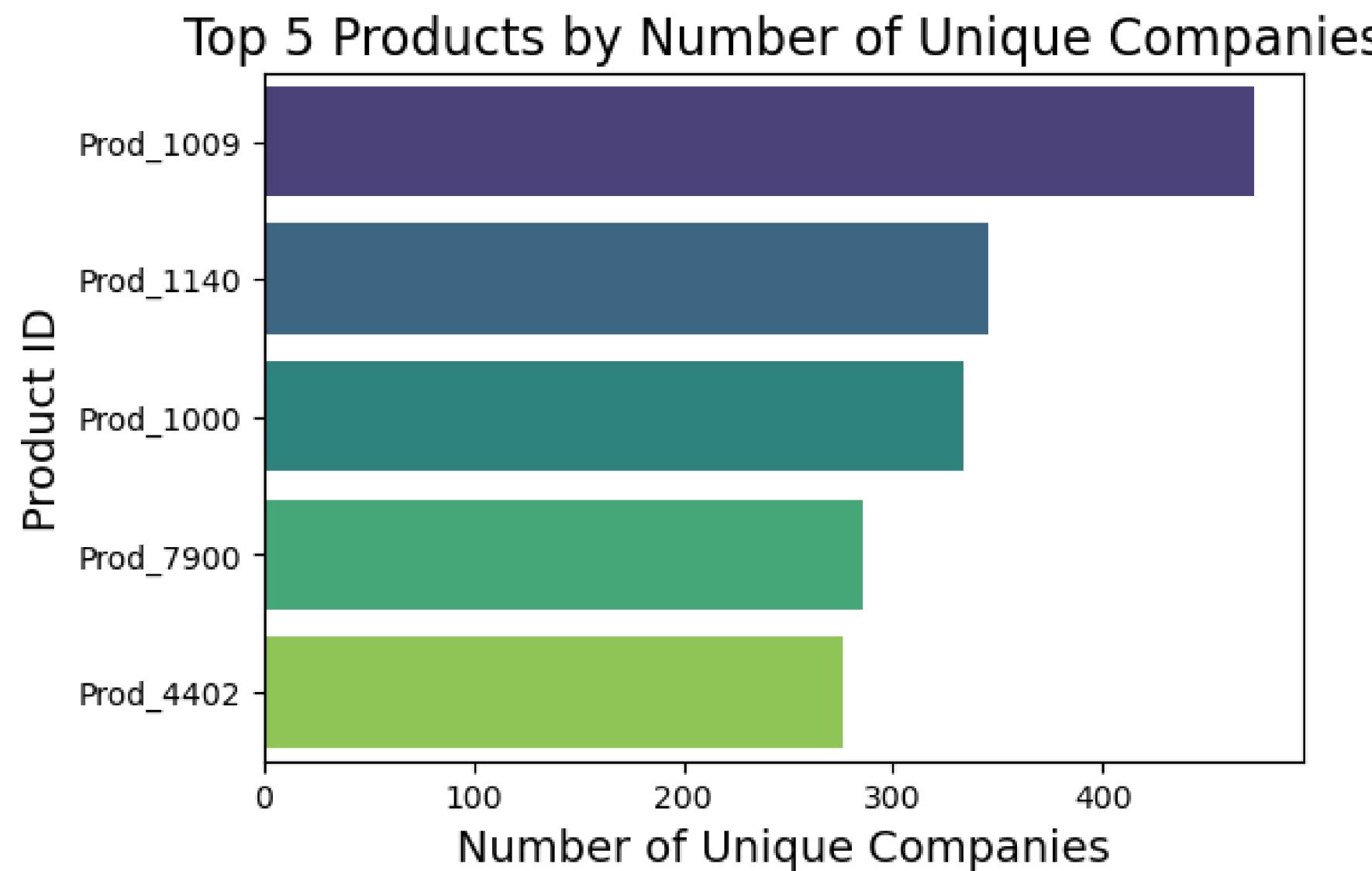


Performance Weight: 0.5

Market Versatility: Selling to a diverse range of companies can indicate product versatility and broader market appeal, but less critical than other metrics.

# Cancellation Rate

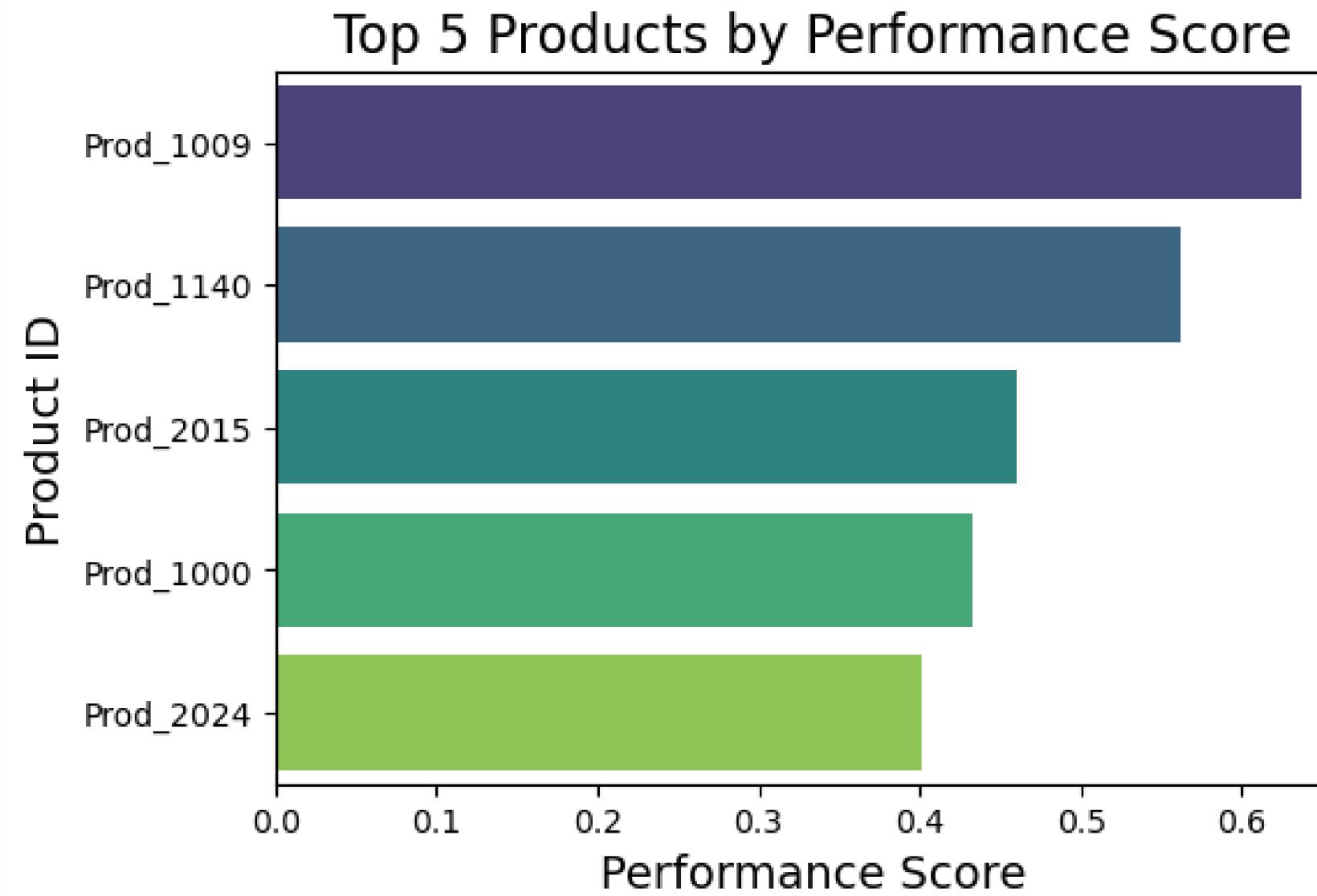
The Cancellation Rate refers to the proportion of orders that are canceled out of the total orders placed for a product.



Performance Weight: 0.10

Reliability and Satisfaction: High completion rates are crucial for maintaining customer trust and ensuring repeat business.

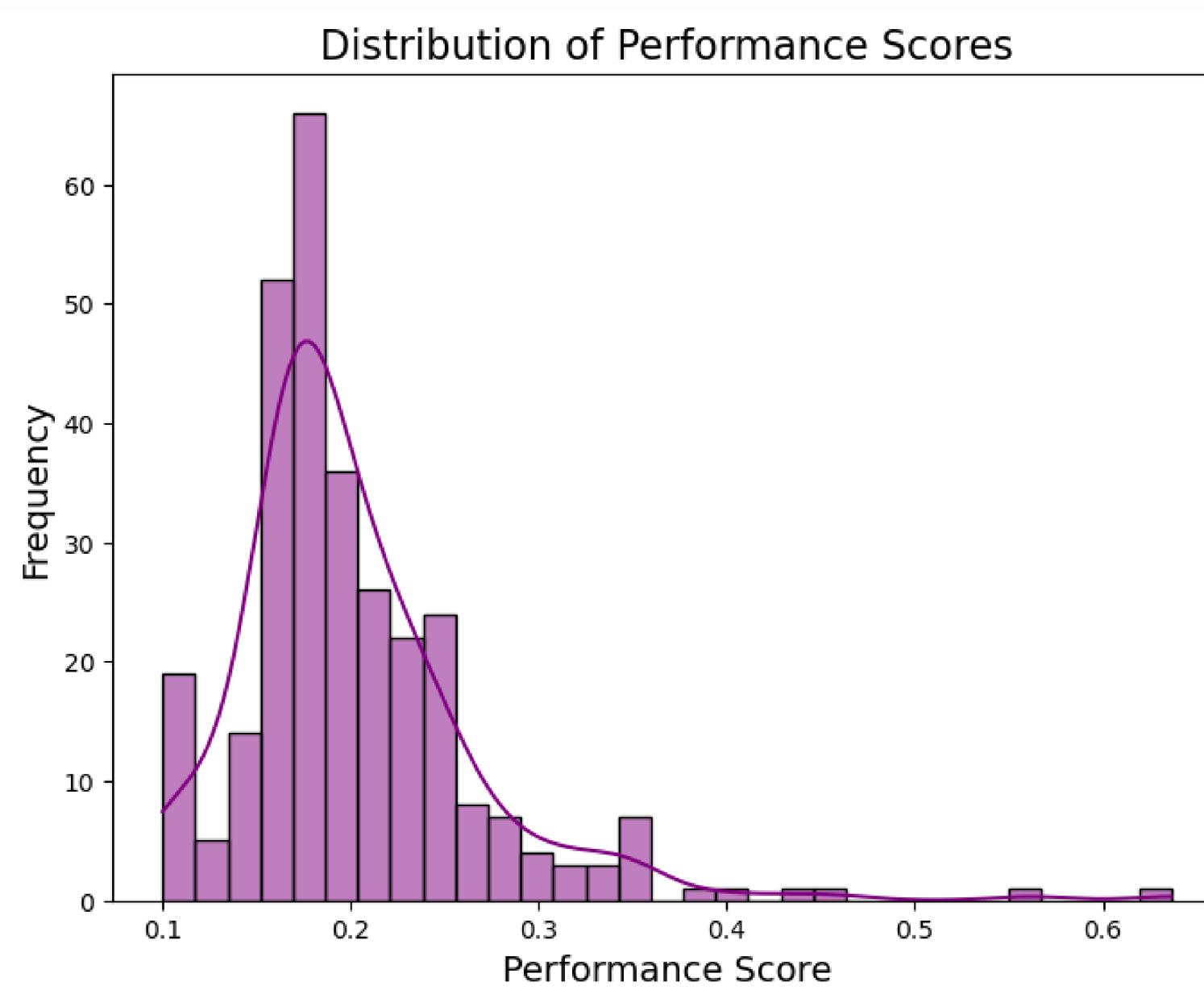
# Performance Result



Product 1009 exhibits exceptional individual metric scores, demonstrating the highest overall sales volume and impressive versatility.

Above are the five products that have highest performance score.

# Performance Result



The score ratings are approximately normally distributed but exhibit right skewness. Additionally, a significant portion of products have very low performance scores, indicating poor performance for many products. This is both understandable and reasonable, as high-performing products are inherently rare, reflected by the right-skewed distribution.

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# Thanks

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