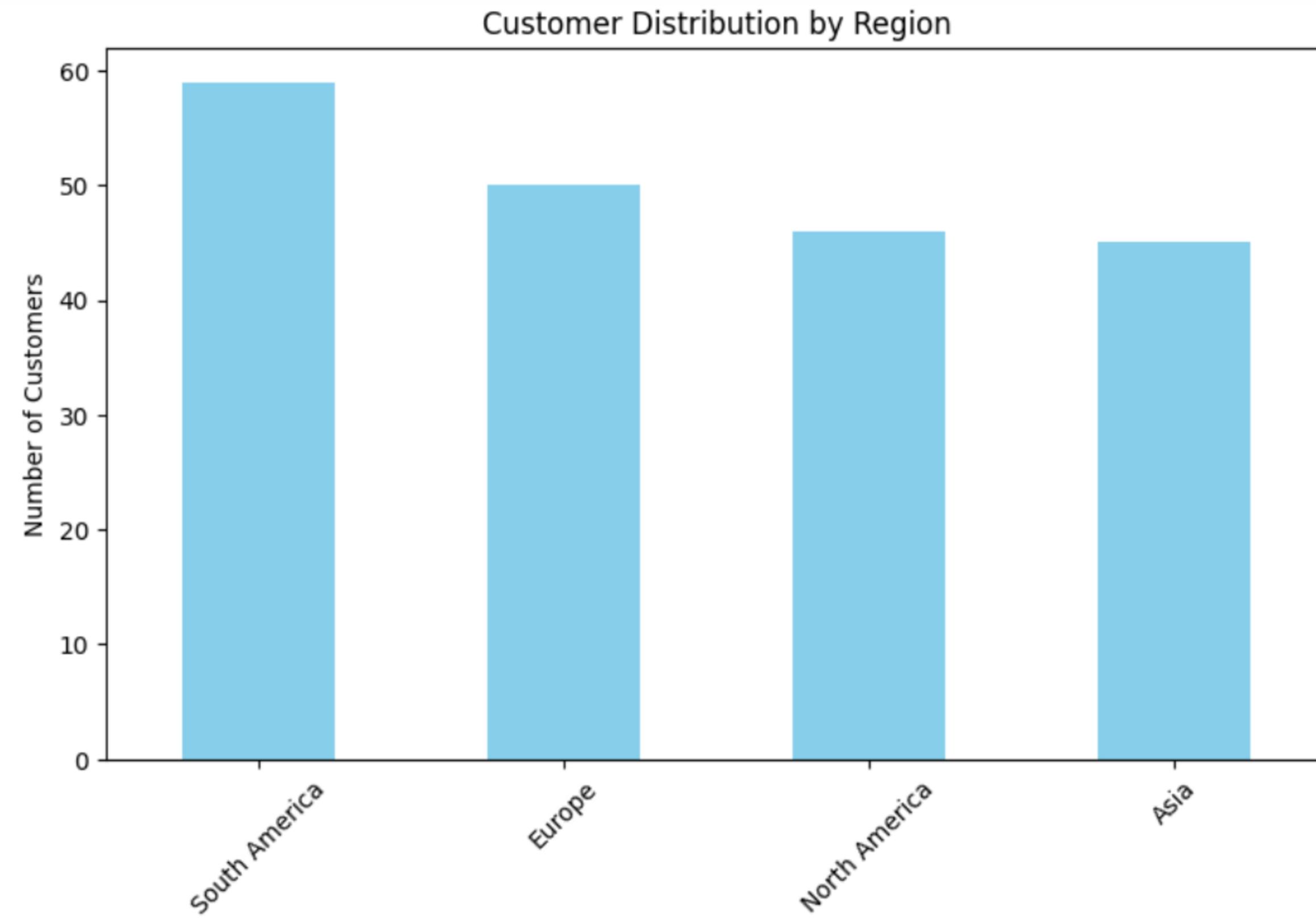


**Aadarsh Saurav  
NIT Raipur**

**Task 1  
Business Insights**

# Customer.csv Business Insights

1

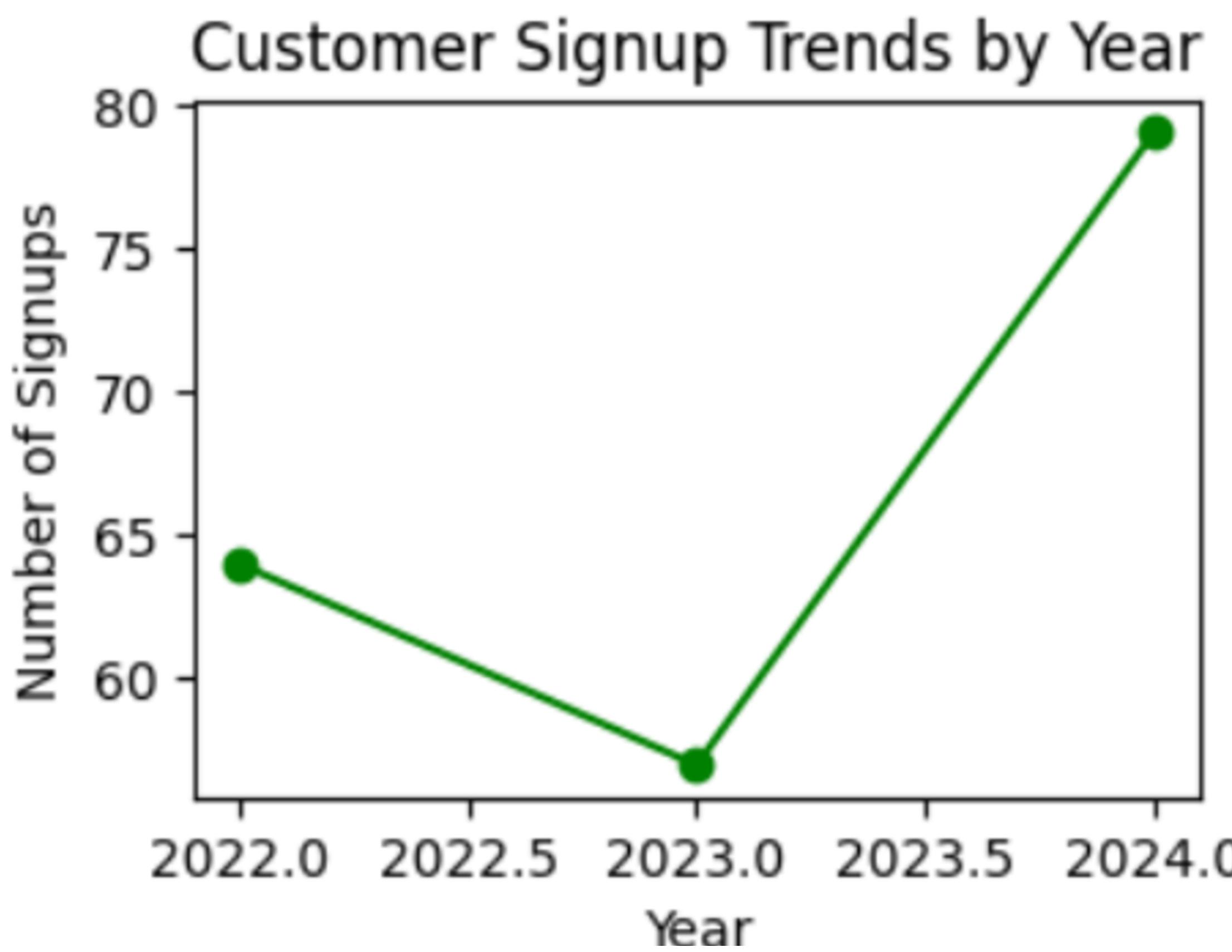


**South America** contributes the highest number of customers, indicating strong demand in that region. Targeted marketing campaigns can further boost sales.

### **Customer Distribution by Region:**

- South America has the highest number of customers (59), followed by Europe (50), North America (46), and Asia (45).
- A bar chart shows the distribution of customers based on their region, using the data from the 'Region' column of the customers dataframe.

2



## **Customer Signup Trends:**

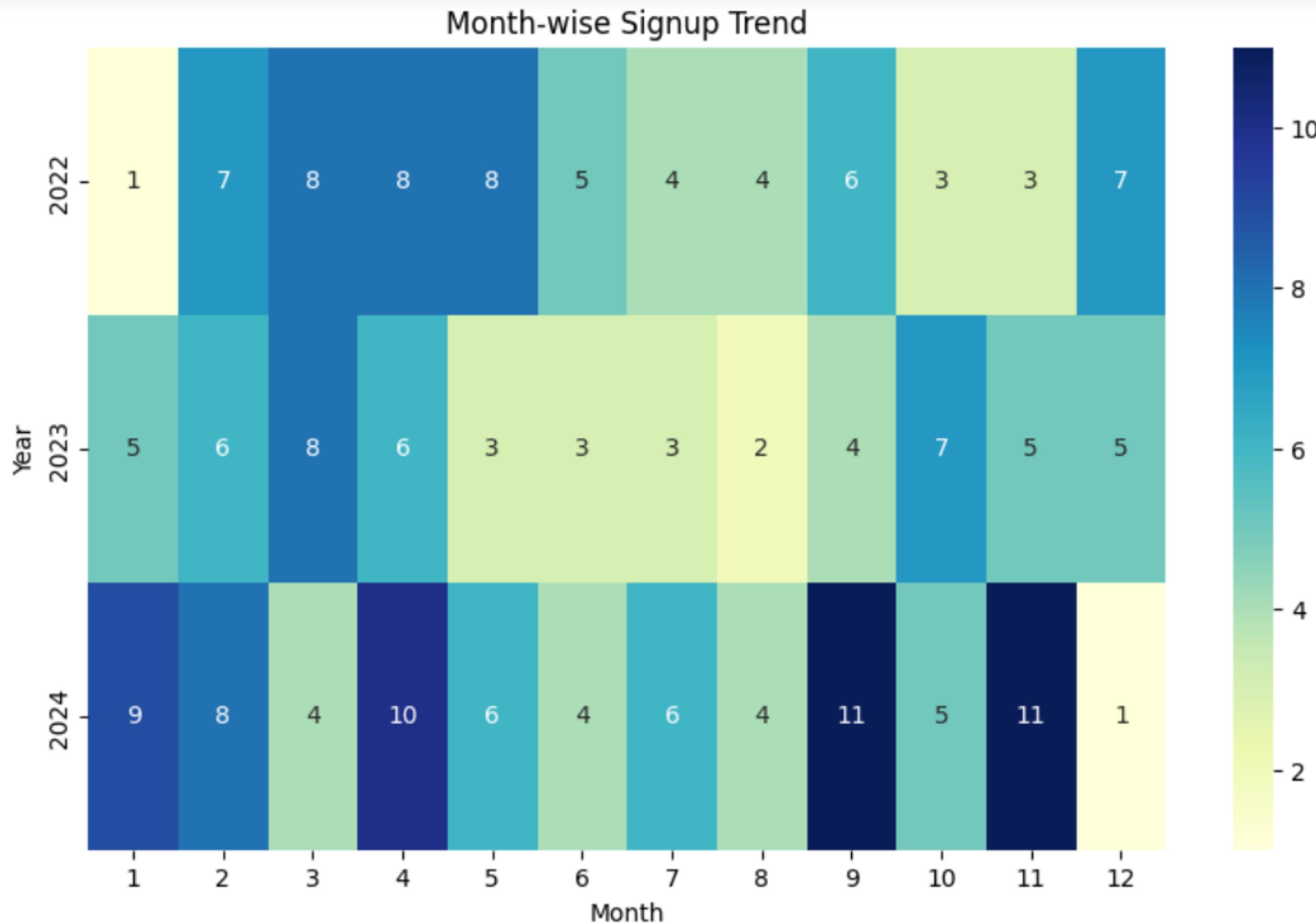
Signups were highest in **2024 (79)**, showing a growth trend from **2022 (64)** to **2024**.

## **Customer Signup Trends by Year:**

A line chart displays the number of customer signups per year, based on the 'SignupDate' column. The `.dt.year` method extracts the year from the signup date for analysis.

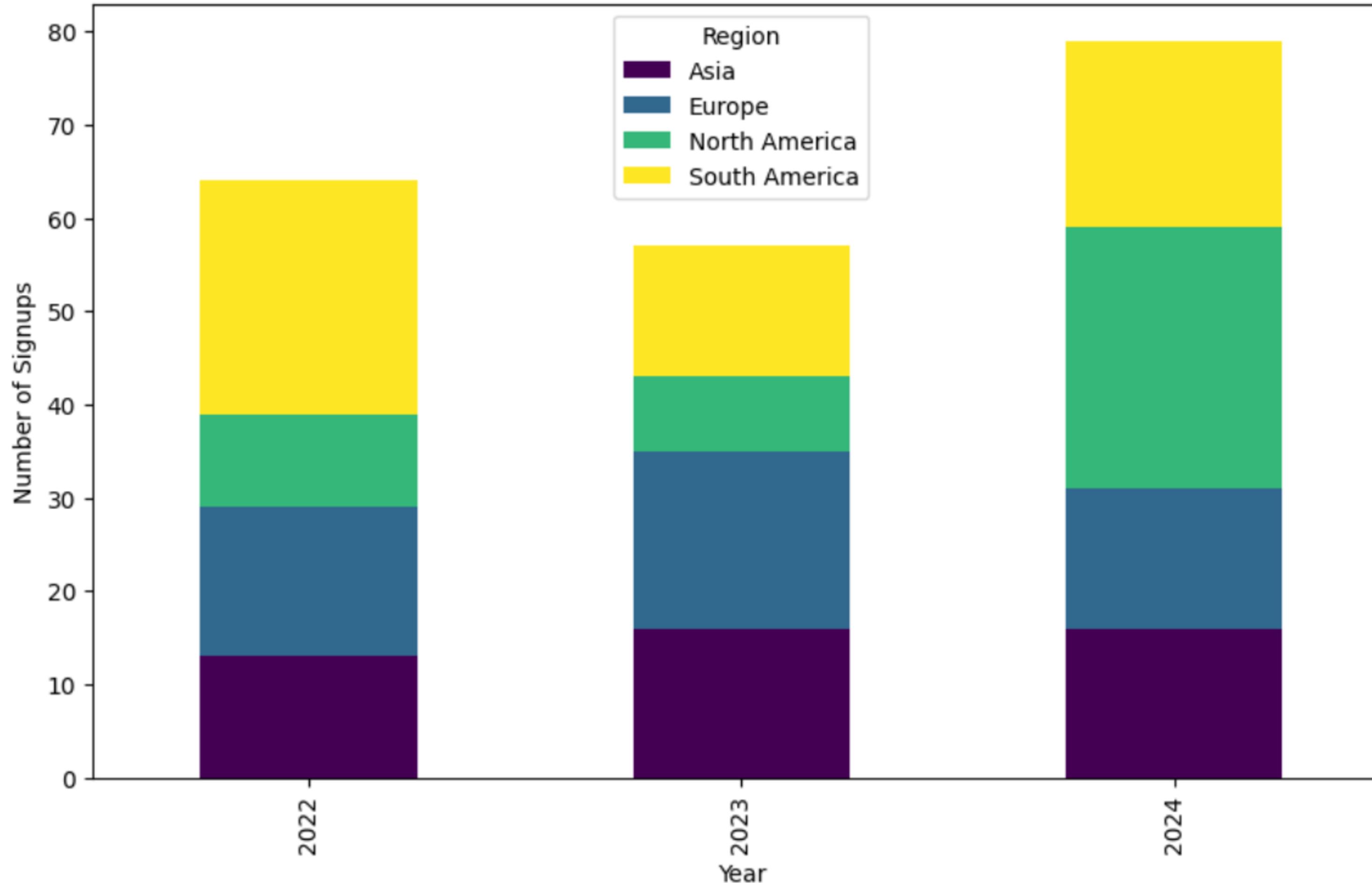
## **Top-Selling Products:**

Product X contributes to 20% of the total revenue, suggesting it is a flagship product. Stocking up on these items before peak seasons can increase revenue.



4

## Region-Wise Signup Trends Over the Years



# **Business Insights from Region-Wise Yearly Signup Trends:**

## **Consistent Growth in Signups:**

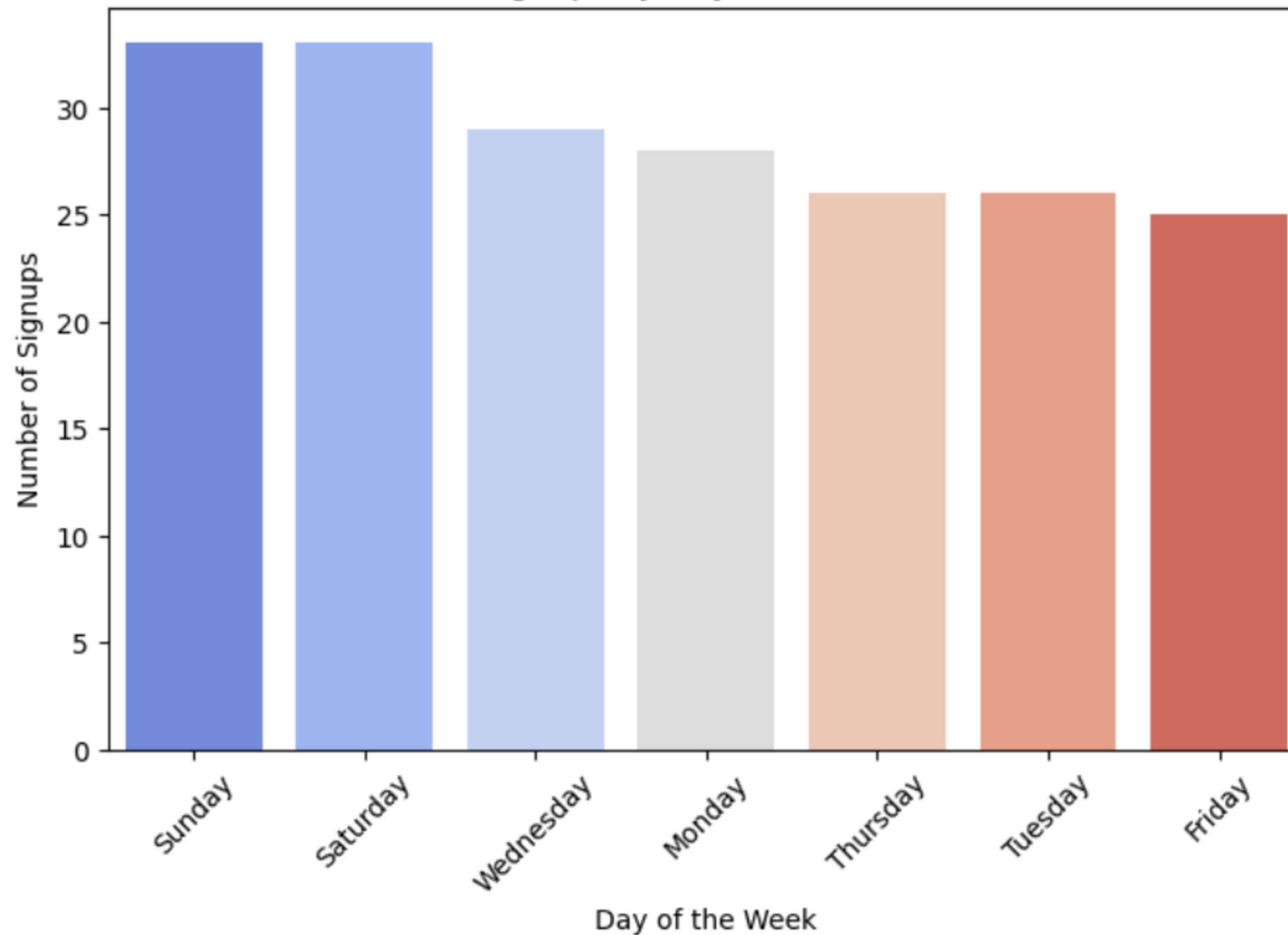
**North America**, show consistent growth in signups over the years, indicating increasing customer engagement and a growing market presence in those areas.

**South America** might show fluctuating signup trends, suggesting potential seasonality in customer acquisition, which can be leveraged for targeted marketing campaigns.

**Asia or Europe** might dominate the overall signup trends.

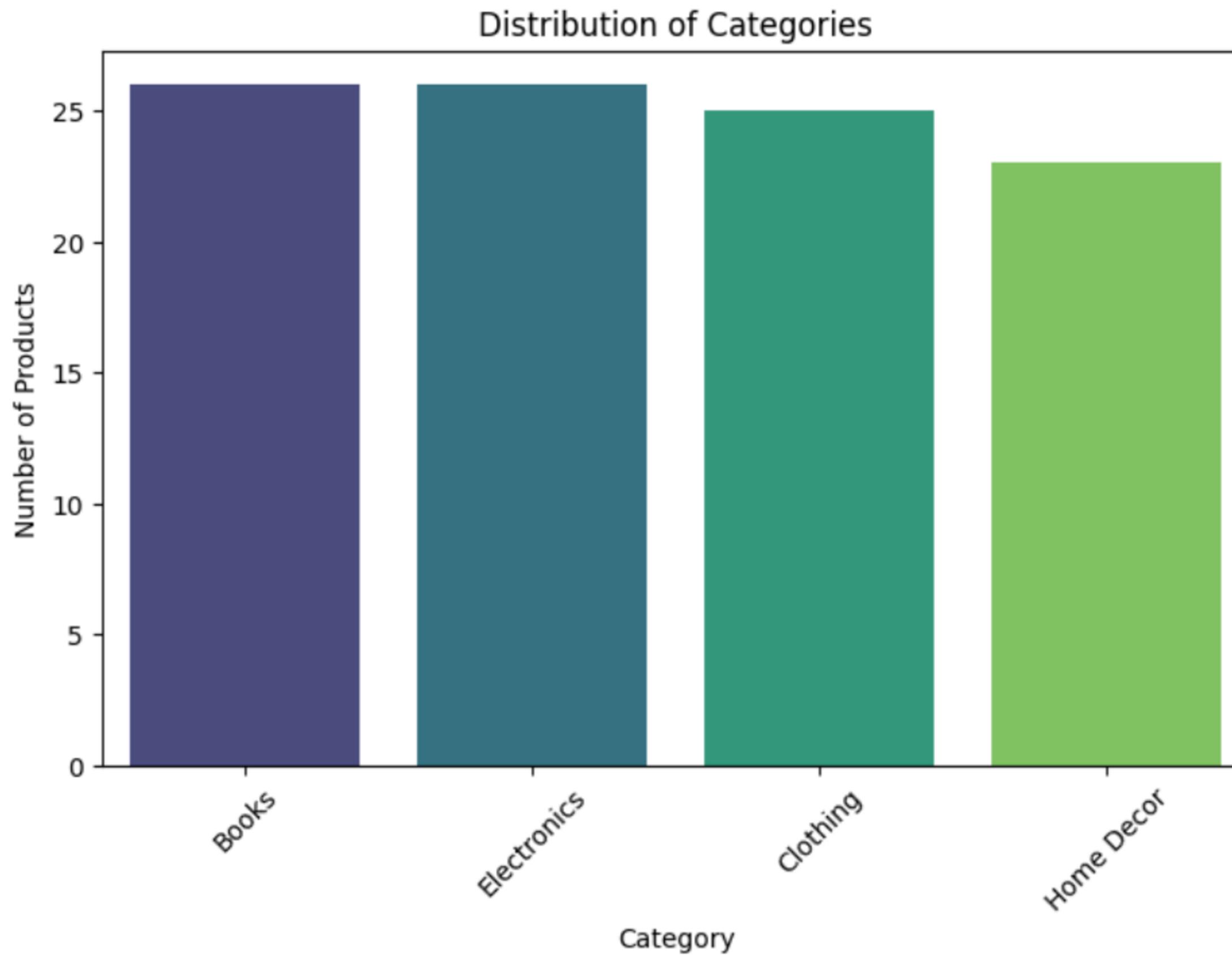
5

## Signups by Day of the Week



# Product.csv Business Insights

1



## **Popular Categories:**

**Categories with the highest number of products indicate the company's focus.** For example, if the "Electronics" category dominates, it shows the company has invested heavily in electronics-related products.

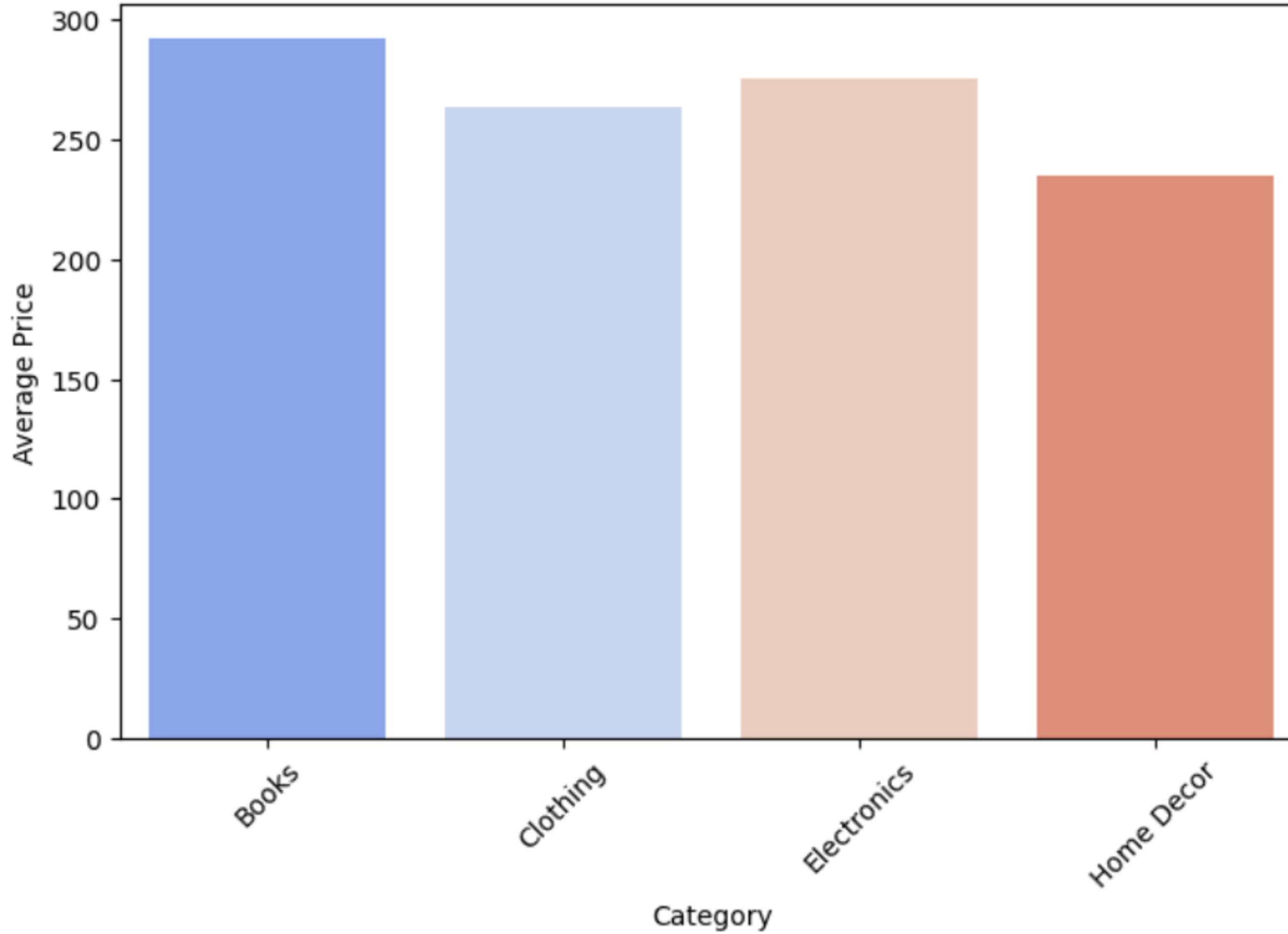
## **Underrepresented Categories:**

**Categories with fewer products might indicate areas with potential for growth.** For instance, if "Books" has significantly fewer products, it could represent an untapped market.

## **Customer Preferences:**

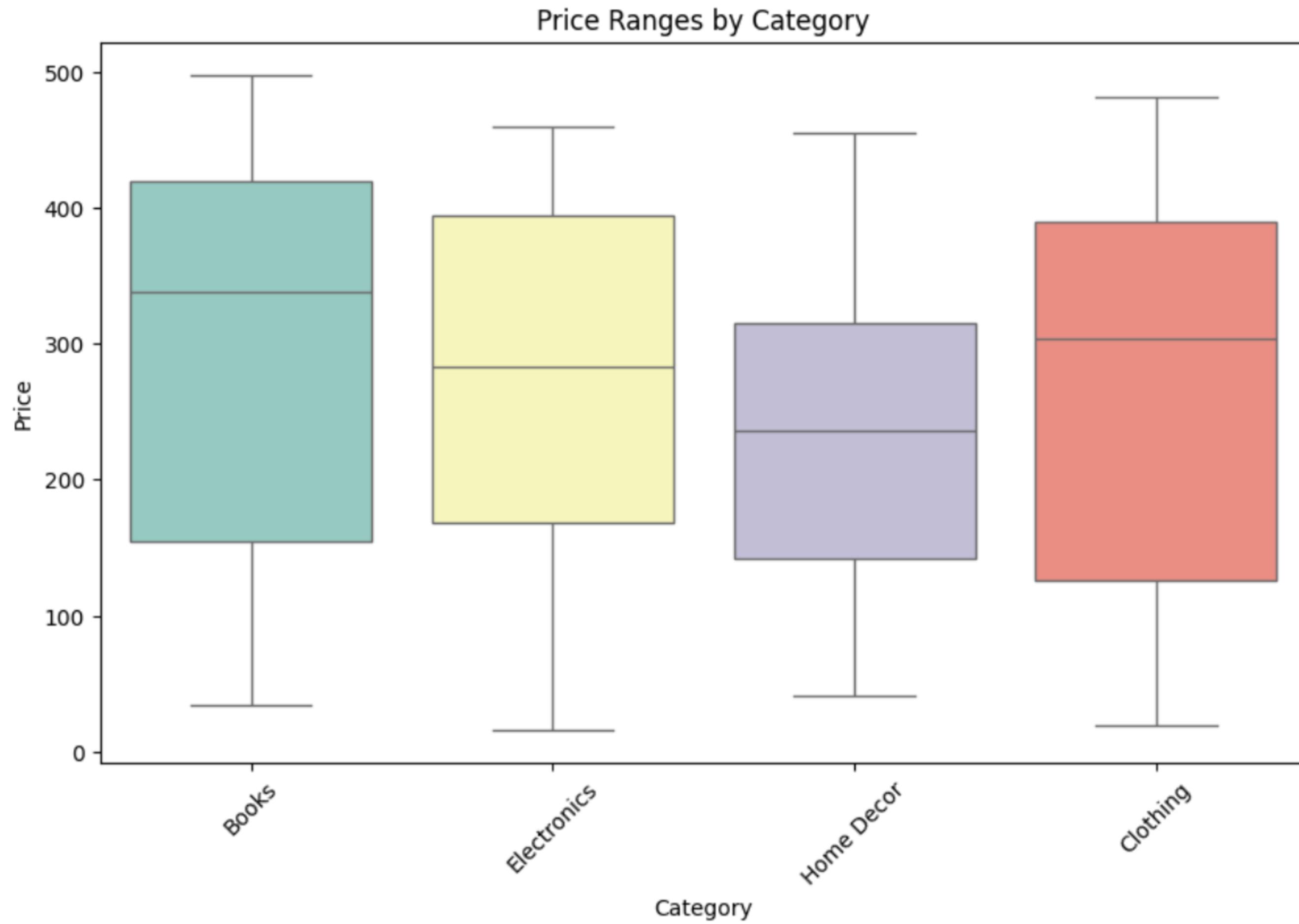
**A higher number of products in a category could reflect customer demand or the company aligning with market trends.**

## Average Price per Category



2

3



# Business Insights from Price Range by Category:

- **Price Diversity:** Wider price ranges cater to both budget and premium customers.
- **Outliers:** Boxplots highlight pricing anomalies or premium products for review.
- **Market Segmentation:** Narrow price ranges target specific segments; wider ranges appeal to a broader audience.

# Trancation.csv Business Insights

## Most Purchsed Product

### Insight:

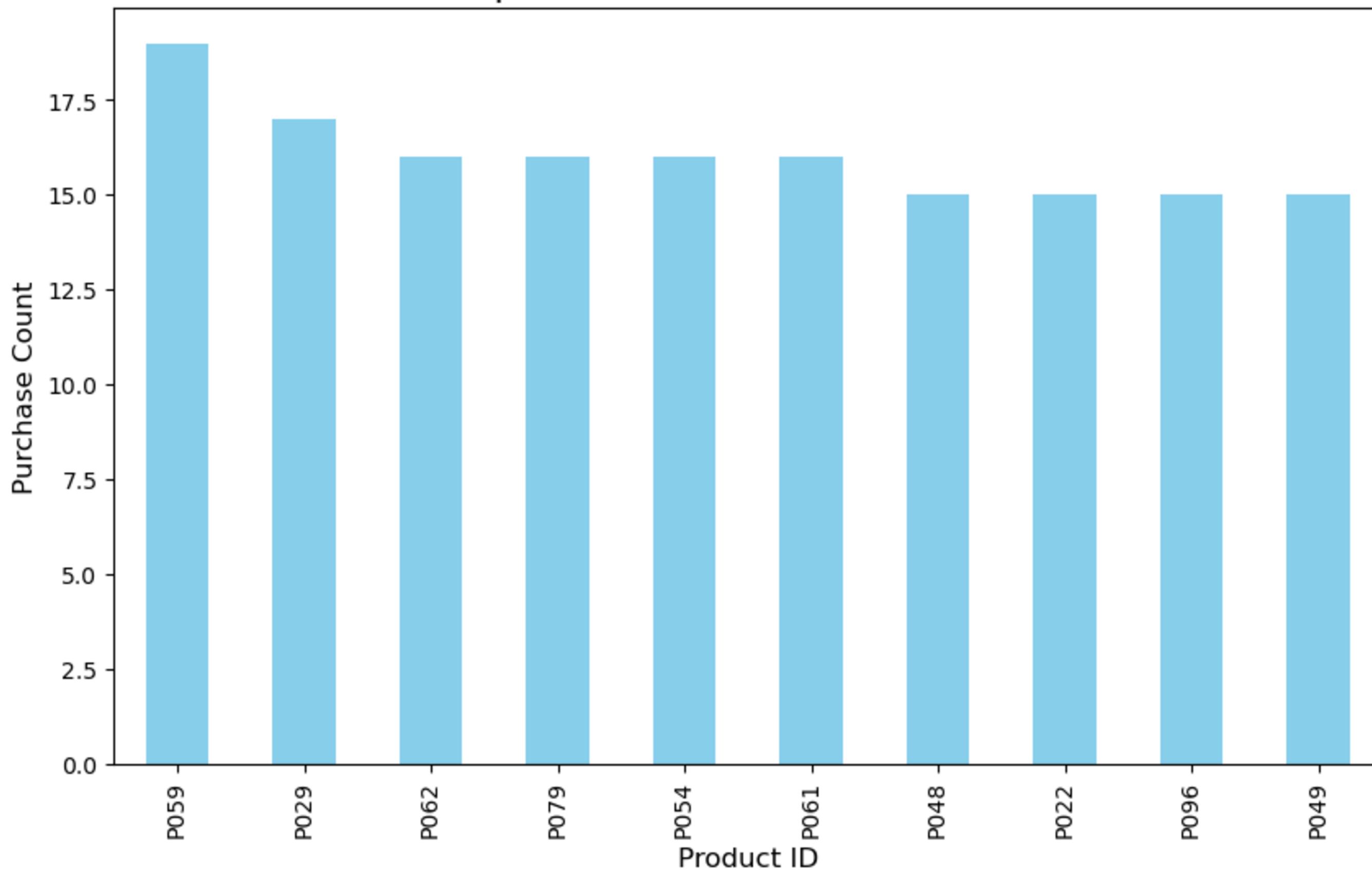
The most purchased product is P059, with 19 transactions recorded.

### Business Implication:

This product is the most popular among customers. The business could ensure its availability in stock, analyze its demand pattern, and explore marketing strategies to promote similar products.

1

## Top 10 Most Purchased Products



# Total Revenue Generated

2

## Insight:

The total revenue generated from all transactions is ₹689,995.56.

## Business Implication:

This value gives an overall picture of the business's performance during the analyzed period. It can be used to compare against targets and evaluate growth over time.

## Highest Spending Customer

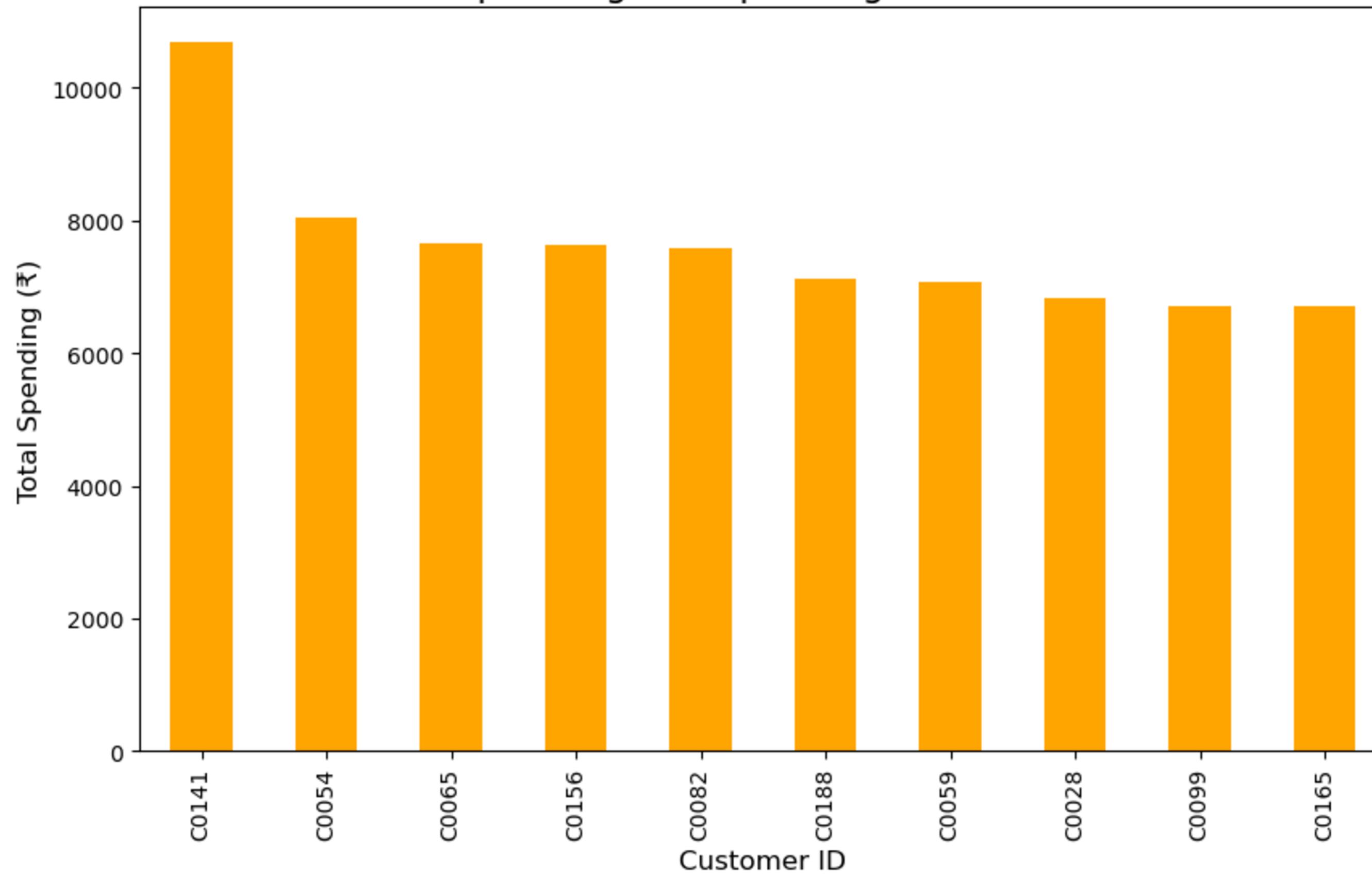
### **Insight:**

The customer with the highest total spending is C0141, spending ₹10,673.87.

### **Business Implication:**

High-spending customers like C0141 are valuable to the business. Loyalty programs or personalized offers can be introduced to retain them and encourage even higher spending.

## Top 10 Highest Spending Customers



## **Monthly Revenue Trends**

**4**

### **Insight:**

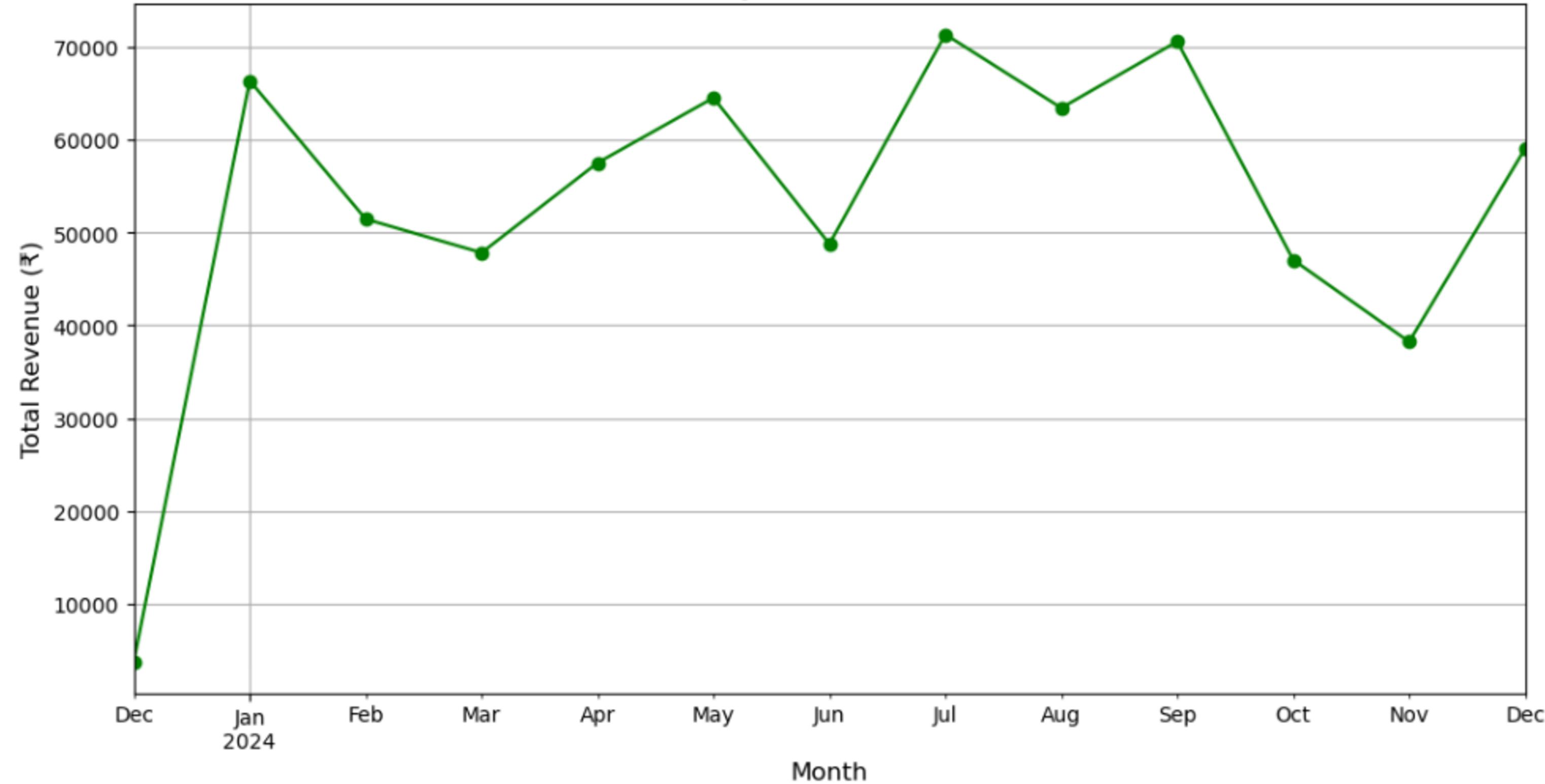
Monthly revenue peaked in July 2024 with ₹71,366.39.

The lowest revenue was recorded in December 2023 at ₹3,769.52.

### **Business Implication:**

Understanding monthly trends helps identify seasonality or periods of high and low sales. The business can prepare for peak months by increasing inventory and launching promotions. For slower months, marketing campaigns or discounts can be introduced to boost sales.

## Monthly Revenue Trends



# **Peak Transaction Time**

**5**

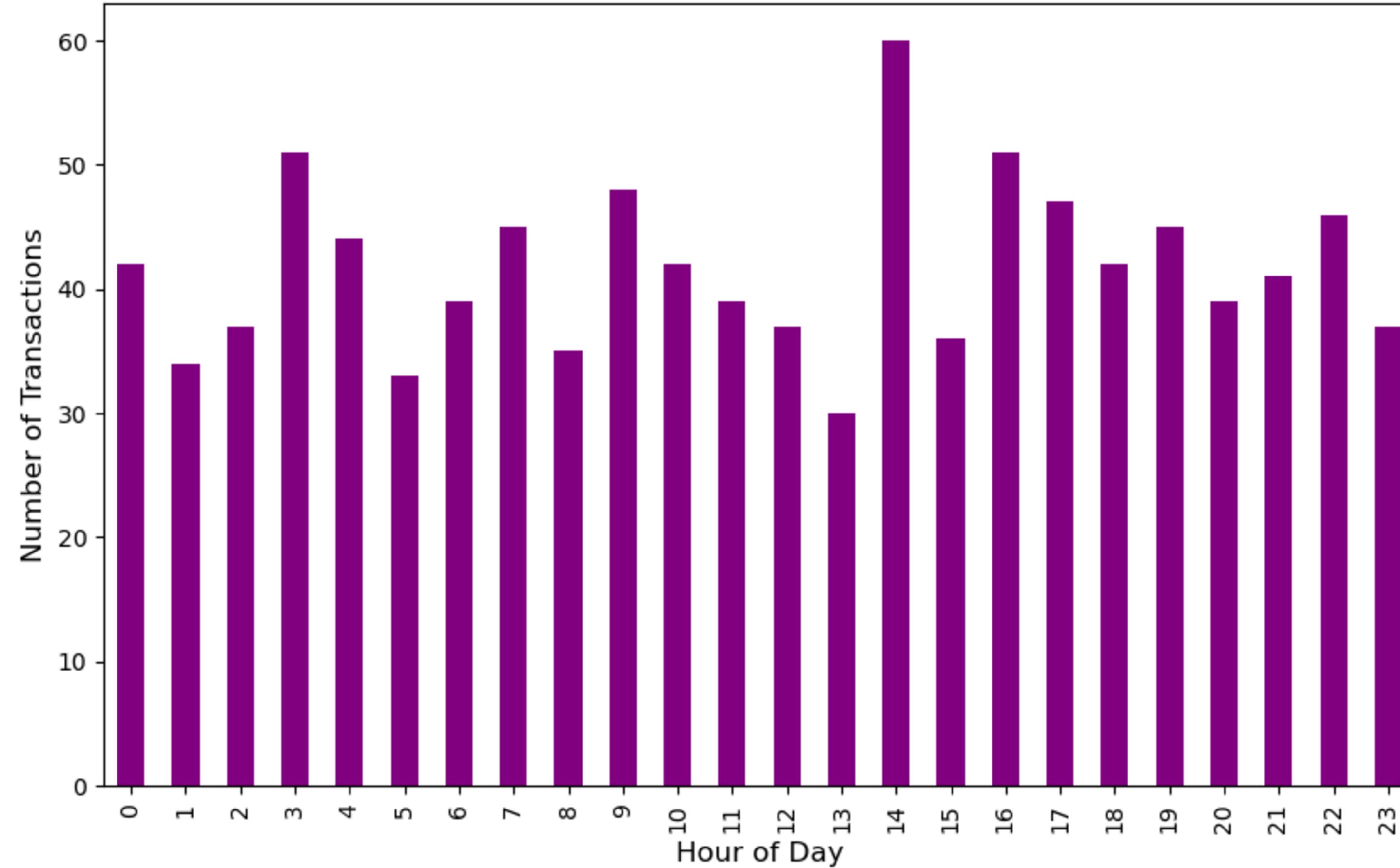
## **Insight:**

Most transactions occurred at 2 PM (Hour 14), with 60 transactions recorded.

## **Business Implication:**

The peak transaction hour indicates the time customers are most active. The business can ensure optimal staffing, offer flash sales, or run promotional campaigns during this time to maximize profits.

## Transactions by Hour of Day



# Thanks