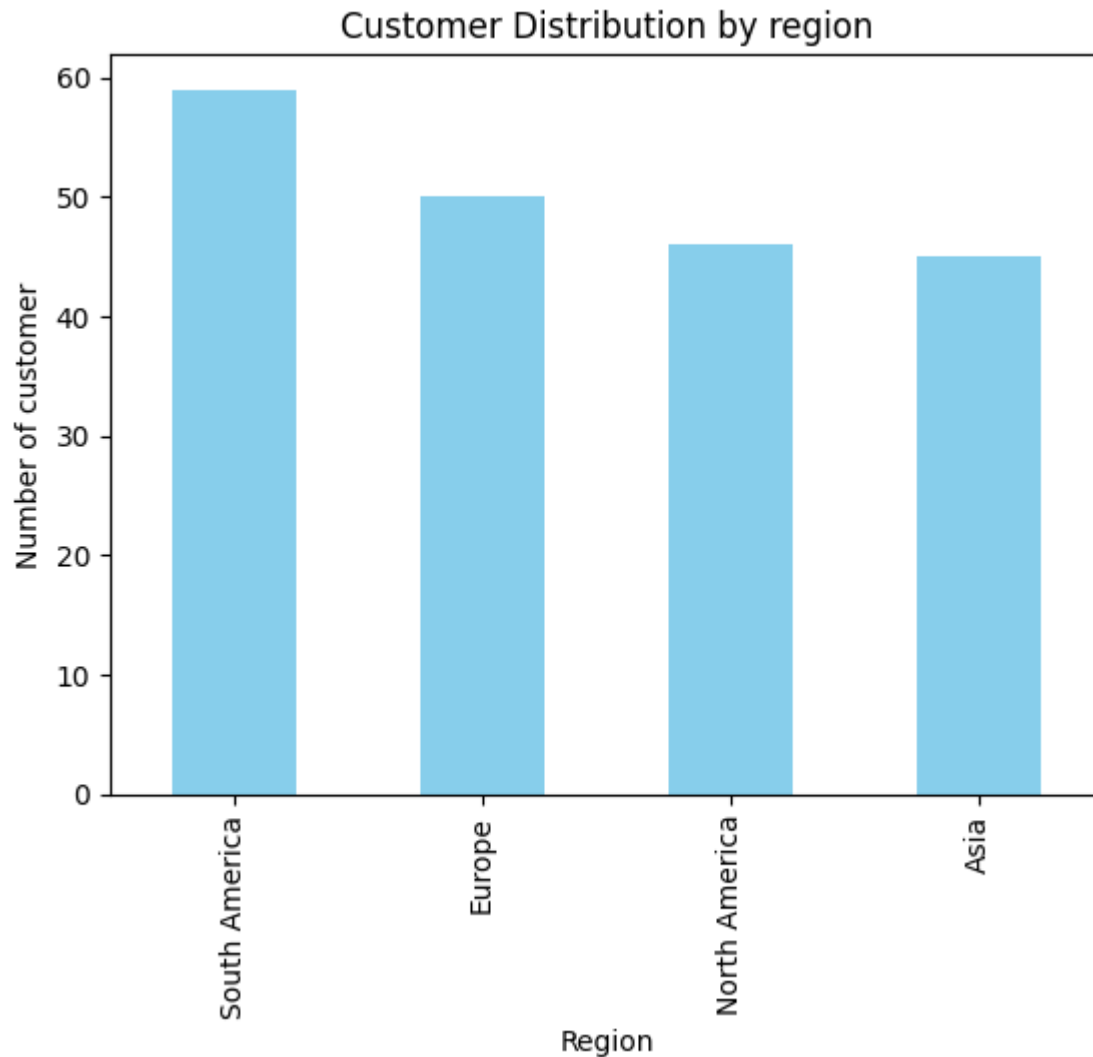# EXPLORATORY DATA ANALYSIS (EDA) AND BUSINESS INSIGHTS

Business Insight :

1.Customer Distribution by region:

Customer Distribution by region


Key Findings:

Customer Distribution by Region:

- South America has the most customers (59), followed by Europe (50), North America (46), and Asia (45).

EXPLORATORY DATA ANALYSIS (EDA) AND BUSINESS INSIGHTS

- South America Leads: South America has the highest number of customers, approximately 60. This indicates that it might be a significant market to focus on.

- Europe Follows Closely: Europe has a slightly lower count but still has a strong presence, showing its importance as a region.

- North America and Asia Are Similar: Both North America and Asia have fewer customers compared to South America and Europe, but their numbers are close, making them relatively smaller yet comparable markets.

- In order to increase the Business ,focus should be on the highly populated region i.e Asia and applying strategy to promote the product .

EXPLORATORY DATA ANALYSIS (EDA) AND BUSINESS INSIGHTS

2.Top 5 Products by Sales Volume:

top 5 product by sales volume
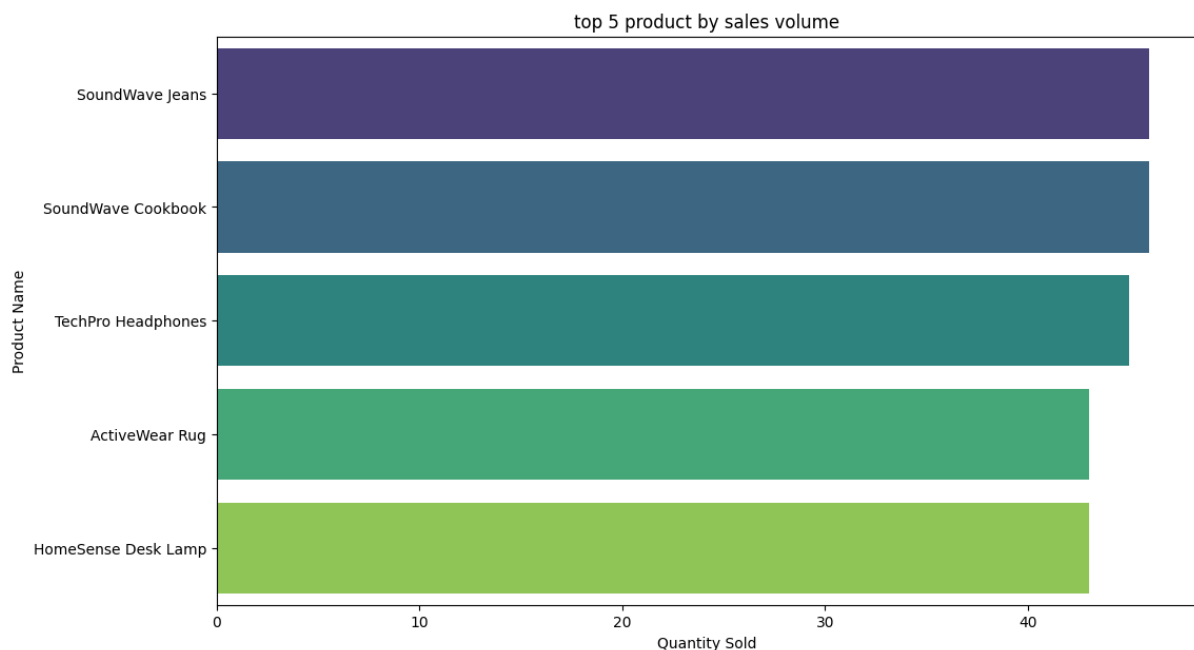
Business Insights:

The bar chart highlights the top 5 products based on sales volume.

1. SoundWave Jeans is the highest-selling product, indicating a strong customer preference, likely due to quality or trend alignment.

2. SoundWave Cookbook and TechPro Headphones closely follow, suggesting demand for diverse product categories like lifestyle and tech accessories.

3. ActiveWear Rug and HomeSense Desk Lamp perform well, showcasing interest in fitness and home essentials.

EXPLORATORY DATA ANALYSIS (EDA) AND BUSINESS INSIGHTS

These results suggest focusing on promoting the top-performing products while analyzing factors driving their success. Cross-promotional strategies, bundling these products, or targeted marketing for similar audiences can boost sales.

Additionally, exploring customer feedback for lower-ranked products may reveal improvement opportunities for future growth.

EXPLORATORY DATA ANALYSIS (EDA) AND BUSINESS INSIGHTS

3.Monthly Sales Trends:
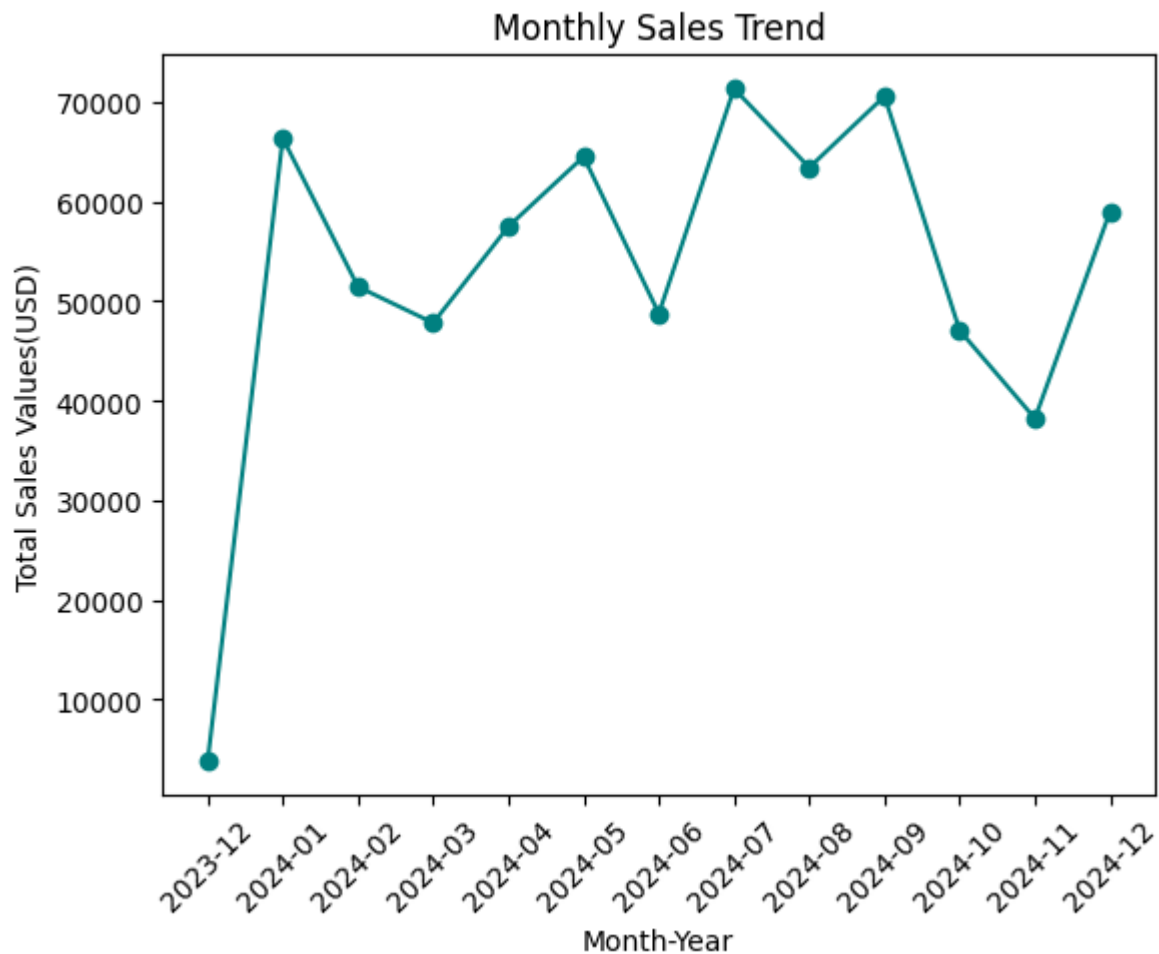
Business insight:

*The monthly sales trend reveals fluctuating performance throughout the year.*

1. *Strong Start: Sales peaked in December 2023 and January 2024, likely due to holiday shopping or seasonal promotions.*

EXPLORATORY DATA ANALYSIS (EDA) AND BUSINESS INSIGHTS

2. *Stable Growth: From February to May 2024, sales showed steady improvement, suggesting consistent customer engagement or successful marketing efforts.*

3. *Mid-Year Peaks: Sales reached another high during July and September, which could correlate with seasonal demand or promotional campaigns.*

4. *Sharp Decline: A notable dip occurred in October and November, which may reflect decreased market activity or ineffective strategies during this period.*

5. *Recovery: December 2024 saw a strong rebound, likely driven by year-end purchases, for eg- providng offers.*

EXPLORATORY DATA ANALYSIS (EDA) AND BUSINESS INSIGHTS

4.Customer Signup Trend Over Time:
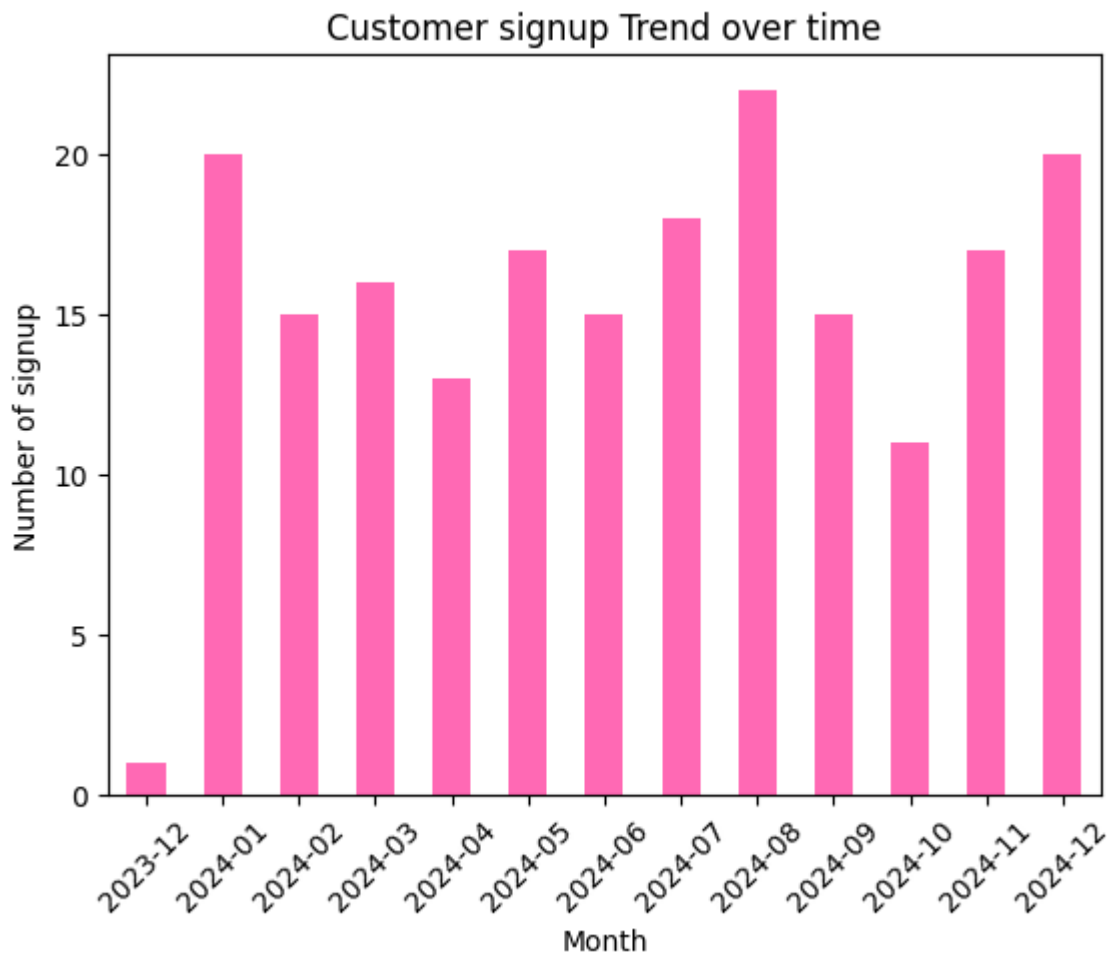
Business Insights from the Customer Signup Trend Chart:

- *The chart reveals an overall positive trend in customer signups over time, peaking in August 2024.*

- *December 2023 had the lowest signups, likely due to the end of the year, but numbers significantly increased in January, indicating strong new-year engagement.*

- *The highest signup month, August, could align with summer campaigns or promotions.*

EXPLORATORY DATA ANALYSIS (EDA) AND BUSINESS INSIGHTS

- *However, there is a notable dip in September and October, suggesting either reduced customer activity or less marketing focus during those months.*

- *The upward trend in November and December 2024 suggests seasonal promotions and end-of-year incentives successfully driving signups.*

- *To capitalize further, targeted campaigns in historically lower-performing months (like September and October) could help stabilize growth and ensure consistent customer acquisition throughout the year.*

5. Product Category Distribution :

Product Category Distribution
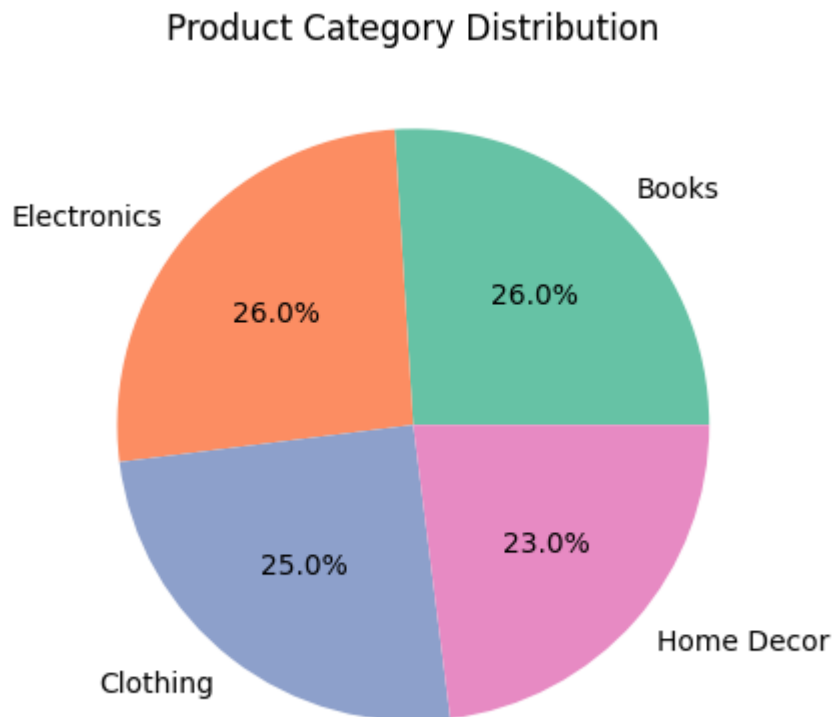
Insights from the Product Category Distribution Pie Chart:

- *The pie chart shows that Books and Electronics dominate the product category distribution, each accounting for 26% of sales, followed by Clothing at 25% and Home Decor at 23%.*

- *While the distribution appears balanced, Home Decor lags slightly, indicating an opportunity to expand this segment.*

EXPLORATORY DATA ANALYSIS (EDA) AND BUSINESS INSIGHTS

- *This could involve introducing new designs, seasonal collections, or targeted promotions to attract more interest.*

- *The strong performance of Books and Electronics suggests high customer demand for these categories, which could be further leveraged through bundling or upselling strategies.*

- *Clothing, with a slightly lower share than Electronics and Books, may also benefit from personalization options or trend-based marketing.*

- *Diversification efforts in underperforming categories could drive growth and enhance revenue stability.*