

Exploratory Data Analysis (EDA) and Business Insights

1. Customer Distribution by Region



EDA:

1. **South America** has the highest number of customers (~60), indicating it is the dominant region in terms of customer base.
2. **Asia**, **North America**, and **Europe** have comparable customer distributions (~40–50 customers each), suggesting a moderate representation in these regions.

3. The distribution across regions is not uniform; South America contributes significantly more customers than the other regions.

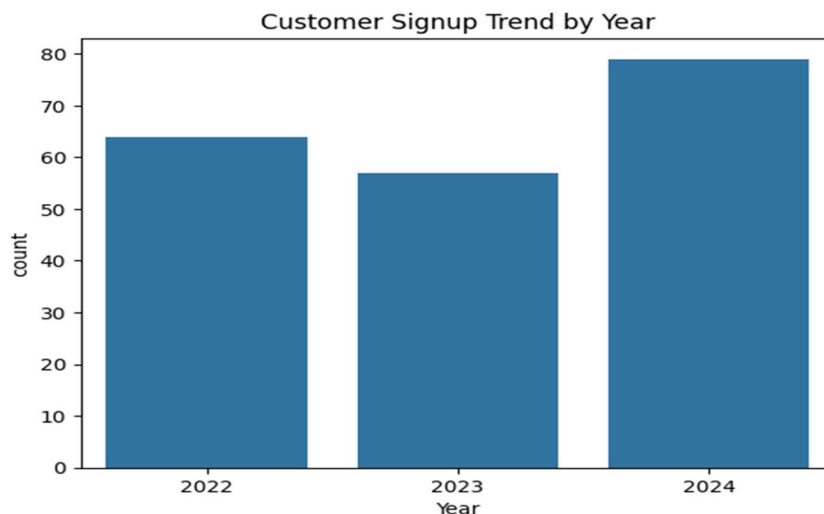
4. **Growth Potential:**

- Regions like Asia and Europe have scope for expanding the customer base to match South America.
- Targeted marketing campaigns in North America and Asia could help increase customer engagement.

Business Insights:

- Since South America has the largest customer base, businesses should prioritize maintaining and strengthening customer relationships in this region.
- Europe and Asia represent growth opportunities. Marketing strategies tailored to these regions' cultural and economic dynamics could increase customer acquisition.

2. Customer Signup Trend by Year



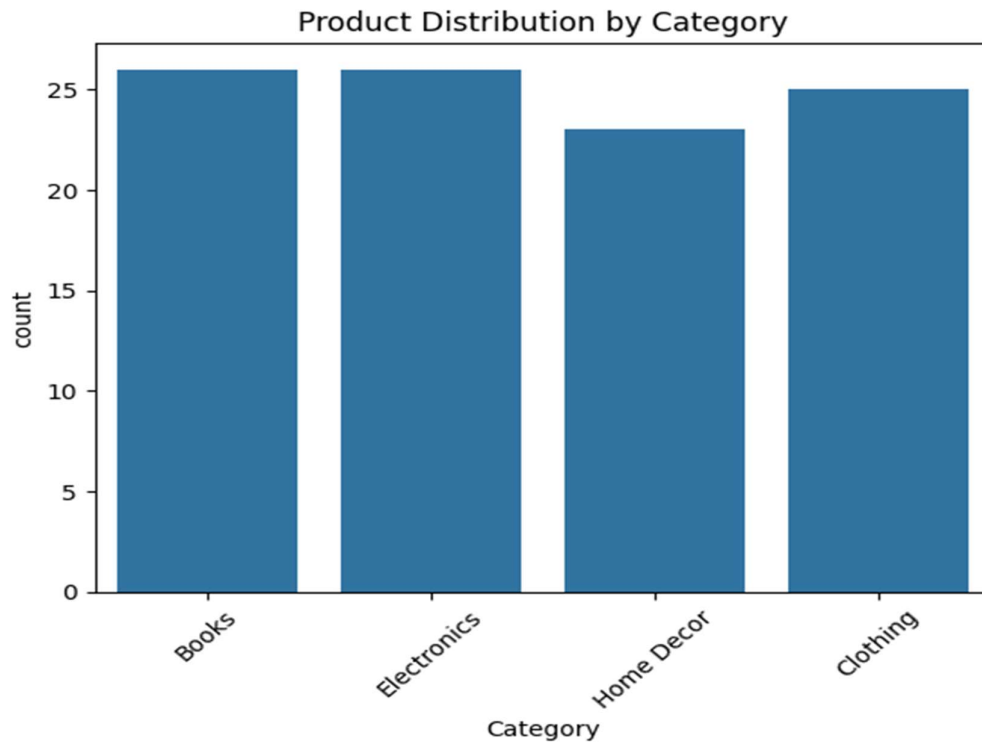
EDA:

- The number of customer signups shows a fluctuating trend over the three years (2022, 2023, and 2024).
- There was a decrease from 2022 to 2023, followed by an increase in 2024.
- The highest number of signups occurred in 2024.
- Increase in 2024 suggests successful efforts in marketing, product offering, or market conditions.

Business Insights:

- Drop in customer signups in 2023 may suggest external or internal factors such as:
 - Increased competition.
 - Economic downturns affecting customer spending.
 - Customer dissatisfaction with product offerings.

2. Product Distribution by Category



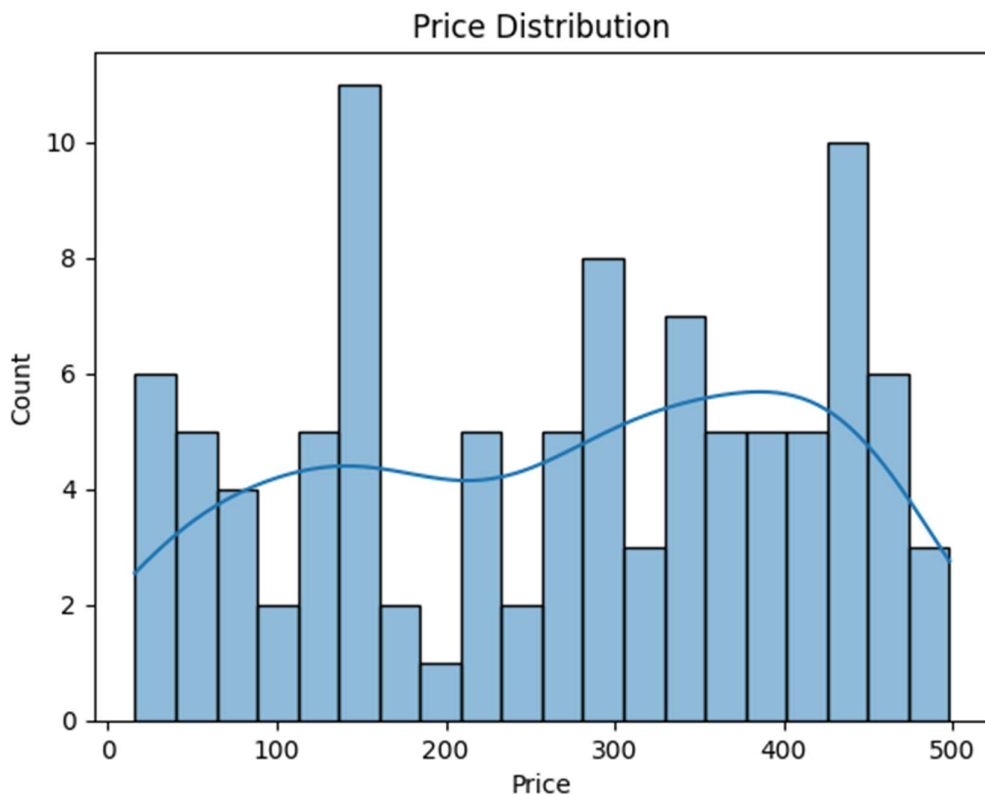
EDA (Exploratory Data Analysis):

- **Books** and **Electronics** have the highest counts, both slightly above 25.
- **Clothing** follows closely, with a count slightly below Books and Electronics.
- **Home Decor** has the lowest count, around 23, making it the least represented category.

Business Insights:

- Since Home Decor has the lowest count, it may present an opportunity for expansion if demand exists.
- Investing in product variety and marketing.

2. Price Distribution



Exploratory Data Analysis:

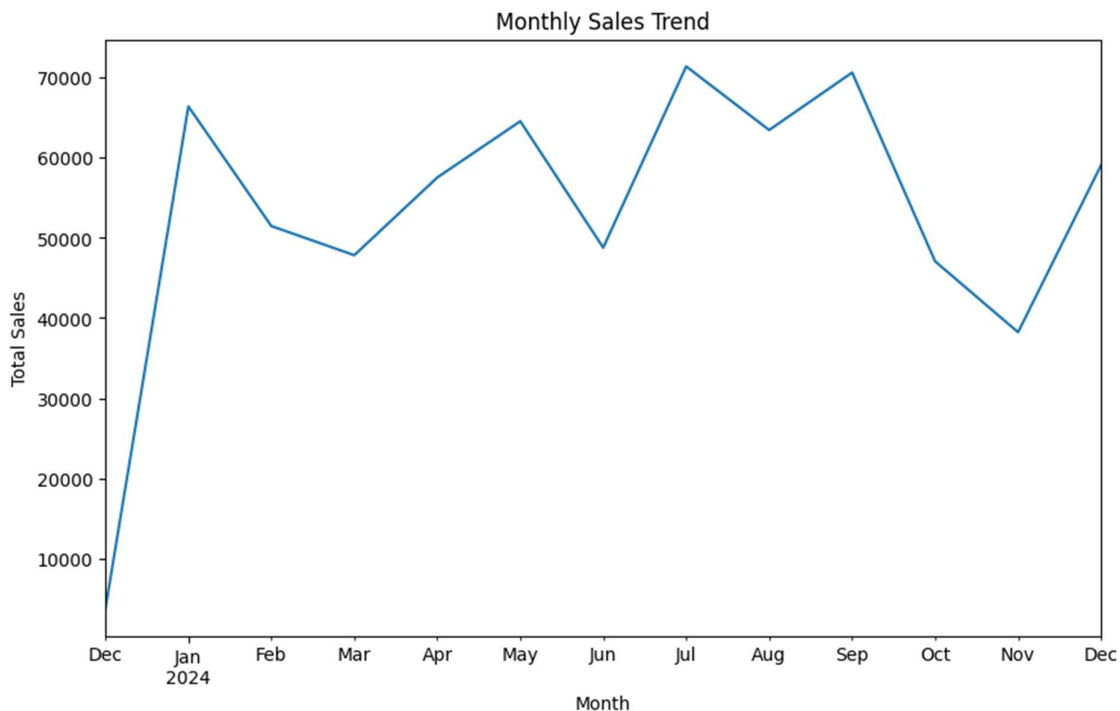
- Higher concentrations of products appear around the **100, 200, 300, and 450 price points**, suggesting popular pricing strategies.

Business Insights:

- Products are available across a wide range, indicating a diverse customer base with different spending capacities.

- Products priced at the peaks might require higher stock levels to meet demand.
- If customer preference leans towards mid-range pricing (200–400), bundling strategies or promotions can help push higher-end products.

5. Monthly Sales Trend



EDA :

1. January recorded the highest sales, with over 70,000 units, marking a strong beginning of the year.
2. Sales remained relatively stable between April and August, hovering around 50,000 to 60,000 units.
3. Sales sharply increased in November and December, indicating a strong recovery towards the year-end.

Business Insights:

1. Spike in January could result from seasonal demand, promotions, or product launches.
2. Investigate the reasons behind the October dip and plan targeted campaigns to mitigate future declines.
3. Capitalize on the November-December recovery by planning holiday promotions or end-of-year sales to maximize revenue.