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eCommerce Transactions Dataset Report

Introduction

This report provides a comprehensive analysis of an eCommerce transactions dataset, focusing on customer behavior, regional performance, product popularity, and sales trends. By leveraging visualizations such as bar charts and line graphs, the report aims to uncover key insights that can drive strategic business decisions. The analysis highlights customer distribution across regions, signup trends over time, top-selling product categories, and monthly transaction patterns, offering actionable recommendations for market expansion, product optimization, and improved customer engagement strategies.

Exploratory Data Analysis (EDA) and Business Insights

1. Performing Customer Analysis to identify top regions

Number of Customers by Region
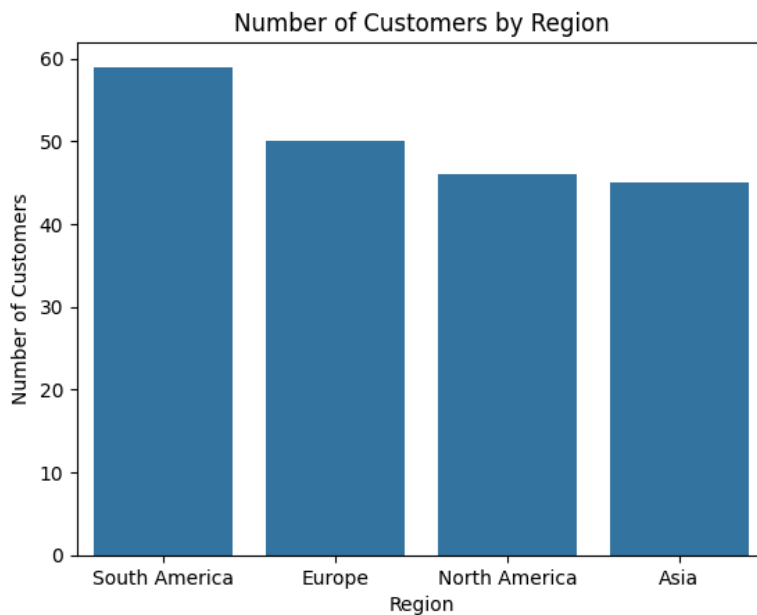
2.

- The bar chart shows customer distribution across regions.
- South America has the highest number of customers.
- Europe, North America, and Asia follow in decreasing order of customer count.
- South America's strong customer base may result from higher demand, better market penetration, or effective marketing.
- Asia, with fewer customers, represents a potential untapped market.
- The business could focus on marketing or localized strategies to expand in regions like Asia.

2. Signup Trends Over Time

Customer Signup Trends Over Time
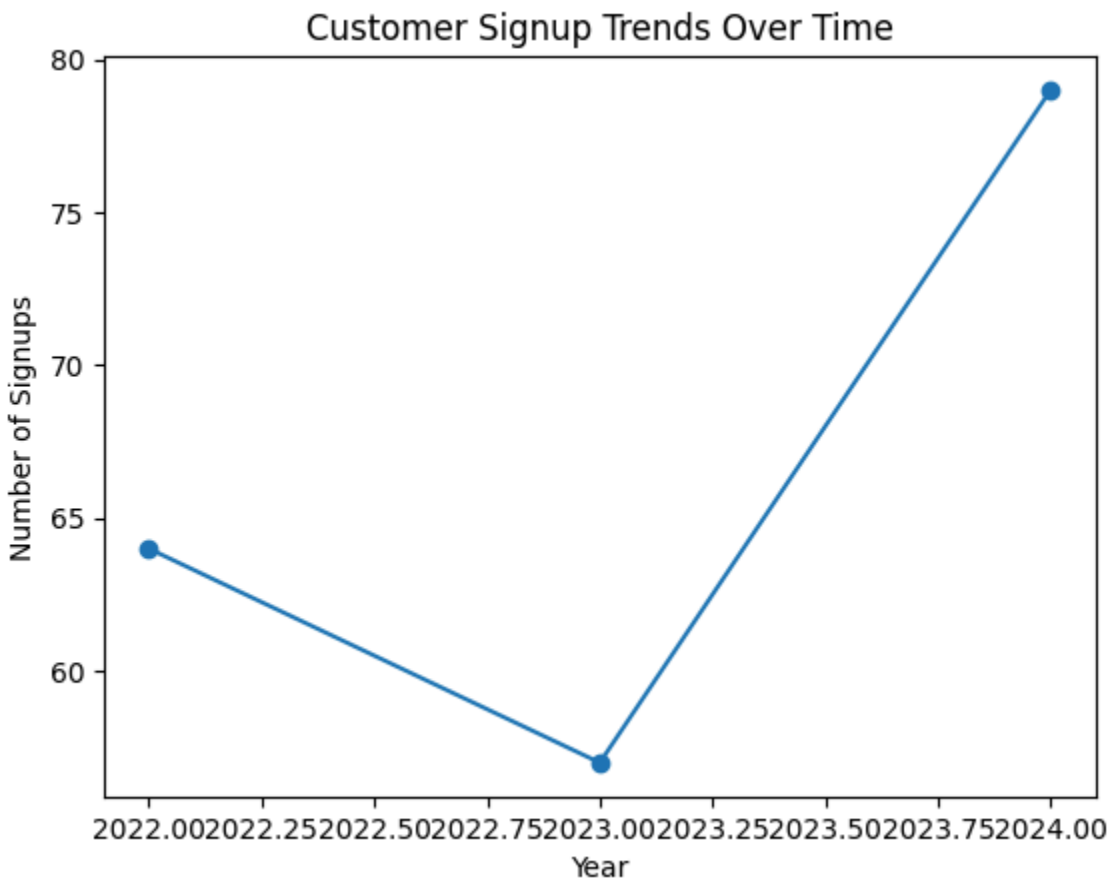
- The line chart shows customer signup trends over time.
- Signups initially declined, reaching their lowest point in 2023.

- A significant surge in signups occurred after 2023, peaking in 2024.
- The surge suggests the implementation of effective strategies, such as marketing campaigns, product improvements, or market expansion.
- The earlier decline may indicate challenges or reduced interest, which were successfully addressed to achieve the turnaround.
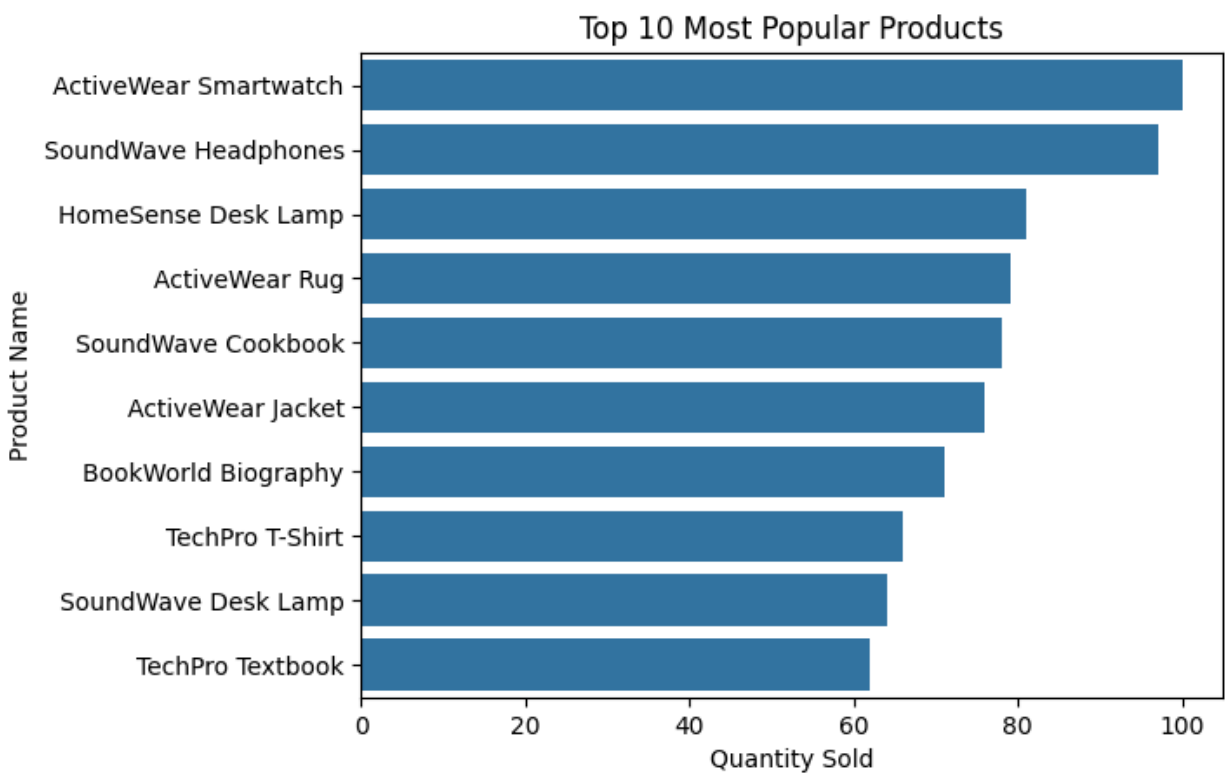
3. Top Categories by Total Sales
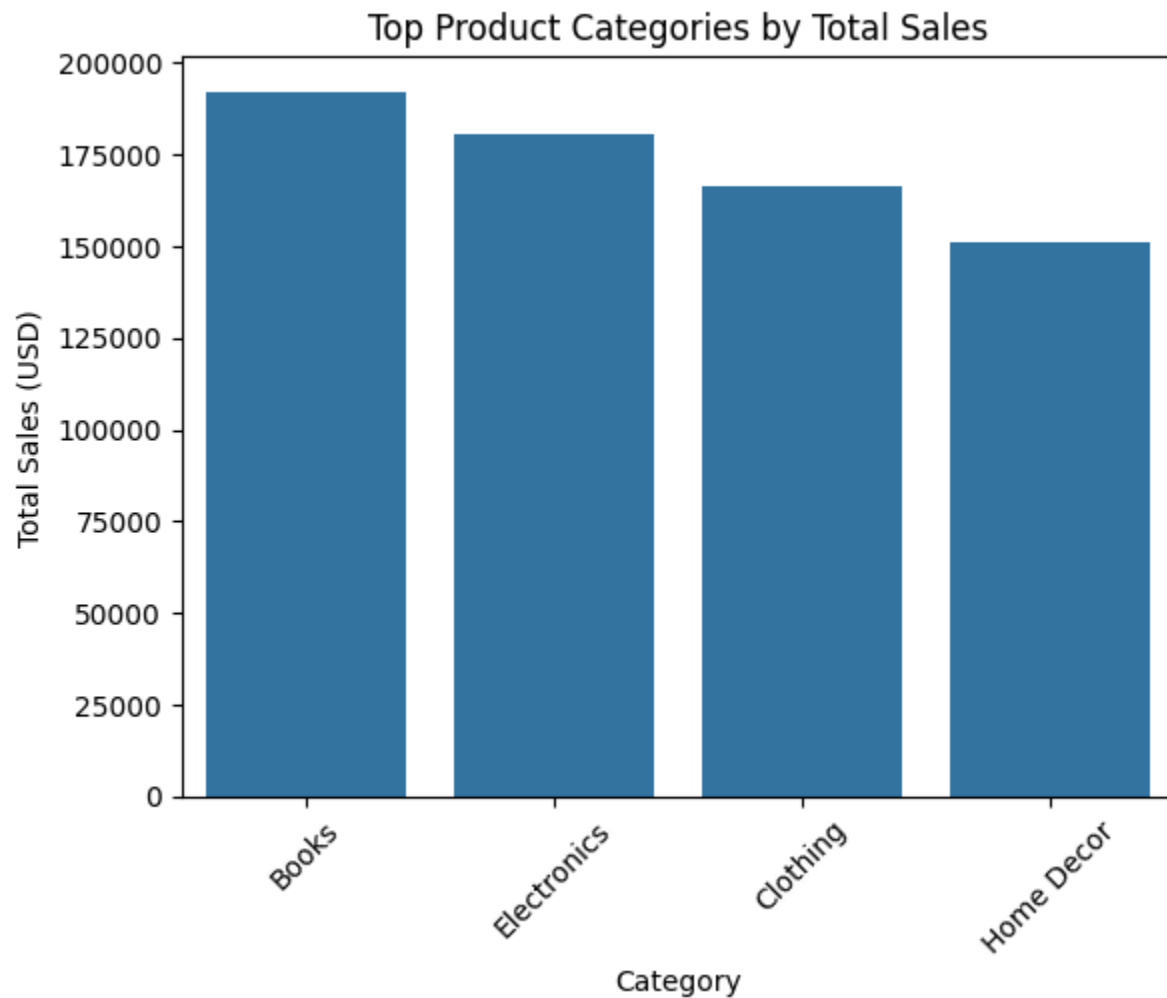
- The bar chart shows total sales (in USD) for different product categories.
- Books are the top-selling category, followed by Electronics, Clothing, and Home Decor.

- Books and Electronics are significant revenue drivers.
- Clothing performs well, while Home Decor has lower sales.
- The business should continue focusing on Books and Electronics while exploring strategies to boost Home Decor sales, such as promotions, improved offerings, or expanded marketing.

4. Most Popular Products:

Top 10 Most Popular Products

Product Name	Quantity Sold
ActiveWear Smartwatch	~100
SoundWave Headphones	~97
HomeSense Desk Lamp	~81
ActiveWear Rug	~79
SoundWave Cookbook	~78
ActiveWear Jacket	~76
BookWorld Biography	~71
TechPro T-Shirt	~66
SoundWave Desk Lamp	~64
TechPro Textbook	~62

- The bar graph shows the top 10 most popular products sold by the business.
- "ActiveWear Smartwatch" is the top-selling product, while "TechPro Textbook" is the least popular.
- The products belong to categories like electronics, apparel, home goods, and books.
- The data suggests focusing on high-demand products, diversifying offerings, implementing targeted marketing, and optimizing inventory management to enhance performance.

5.Monthly Transaction Trends:

Monthly Sales Trends
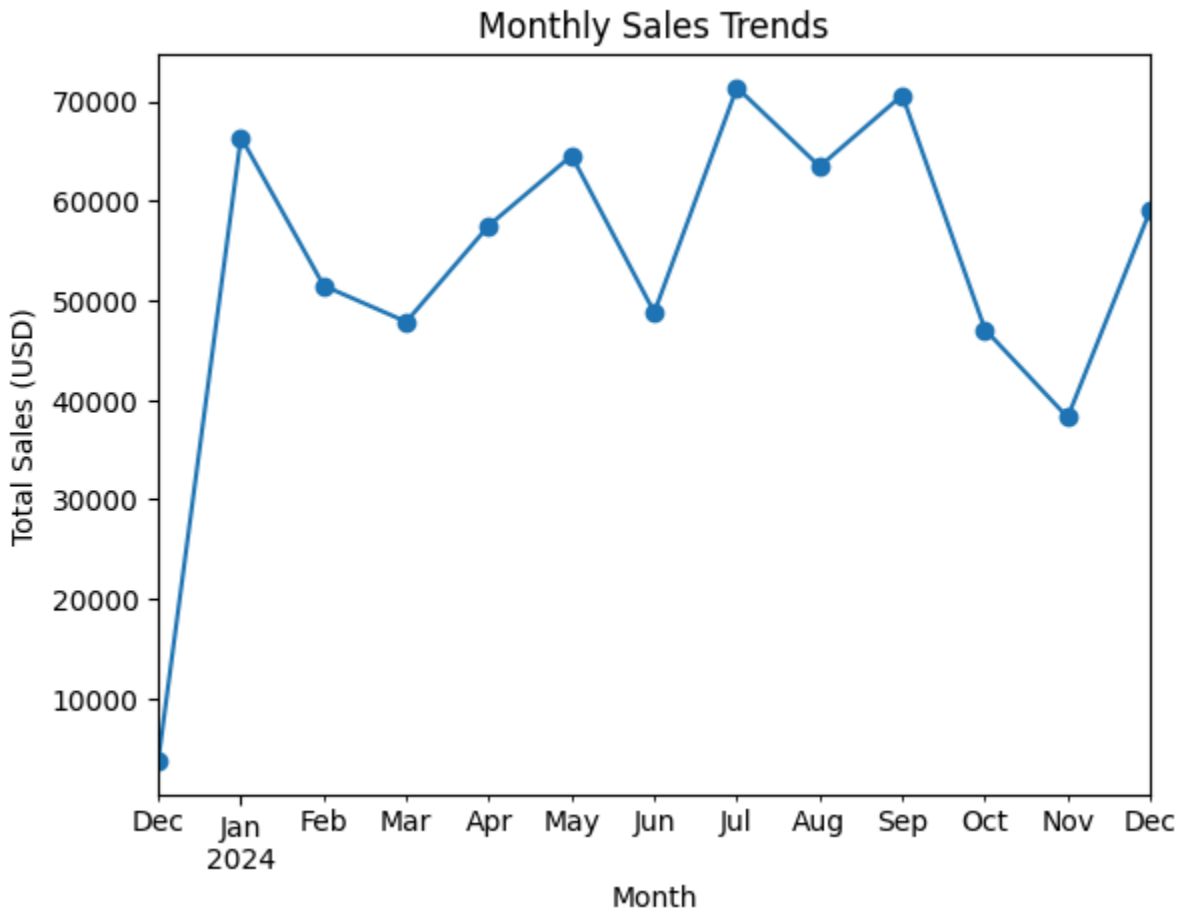
- The line graph shows monthly sales trends from December 2023 to December 2024.
- Sales fluctuate significantly, peaking in July, followed by a decline in August.
- Overall, there is an upward trend, suggesting potential seasonality.
- Further analysis with factors like marketing spend and economic indicators could provide deeper insights.

Report Made by Arnav Suman