

Exploratory Data Analysis (EDA) and Business Insights Report

Overview:

The dataset under analysis consists of sales transactions, customer data, and products data. The primary objective of the analysis is to uncover actionable insights that can drive business growth and optimize operations.

Overview of [customer.csv](#):

This dataset contains information about customers, including their unique identifiers, names, regional locations, and the dates they signed up. It can be used for customer segmentation, regional analysis, or tracking signup trends over time.

	CustomerID	CustomerName	Region	SignupDate
0	C0001	Lawrence Carroll	South America	2022-07-10
1	C0002	Elizabeth Lutz	Asia	2022-02-13
2	C0003	Michael Rivera	South America	2024-03-07
3	C0004	Kathleen Rodriguez	South America	2022-10-09
4	C0005	Laura Weber	Asia	2022-08-15

Overview of [products.csv](#):

This dataset contains information about products, including their unique identifiers, names, categories, and prices. It can be used for inventory management, product performance analysis, or pricing studies.

	ProductID	ProductName	Category	Price
0	P001	ActiveWear Biography	Books	169.30
1	P002	ActiveWear Smartwatch	Electronics	346.30
2	P003	ComfortLiving Biography	Books	44.12
3	P004	BookWorld Rug	Home Decor	95.69
4	P005	TechPro T-Shirt	Clothing	429.31

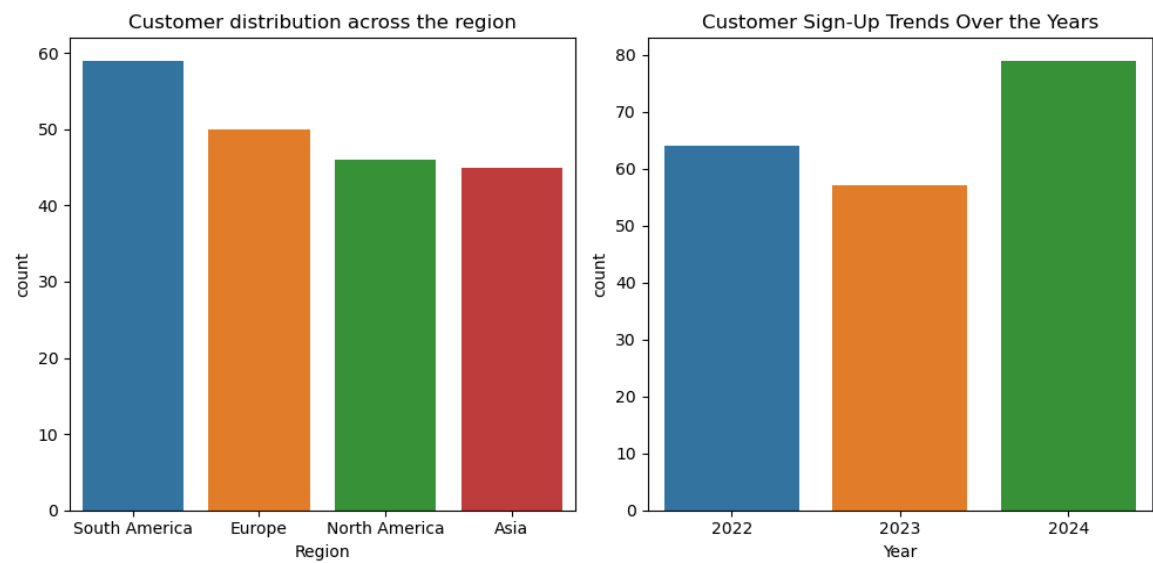
Overview of [Transactions.csv](#):

This dataset captures transactional data, including unique transaction IDs, customer-product associations, transaction dates, quantities purchased, and financial details. It can be used for sales analysis, customer behavior studies, or revenue forecasting.

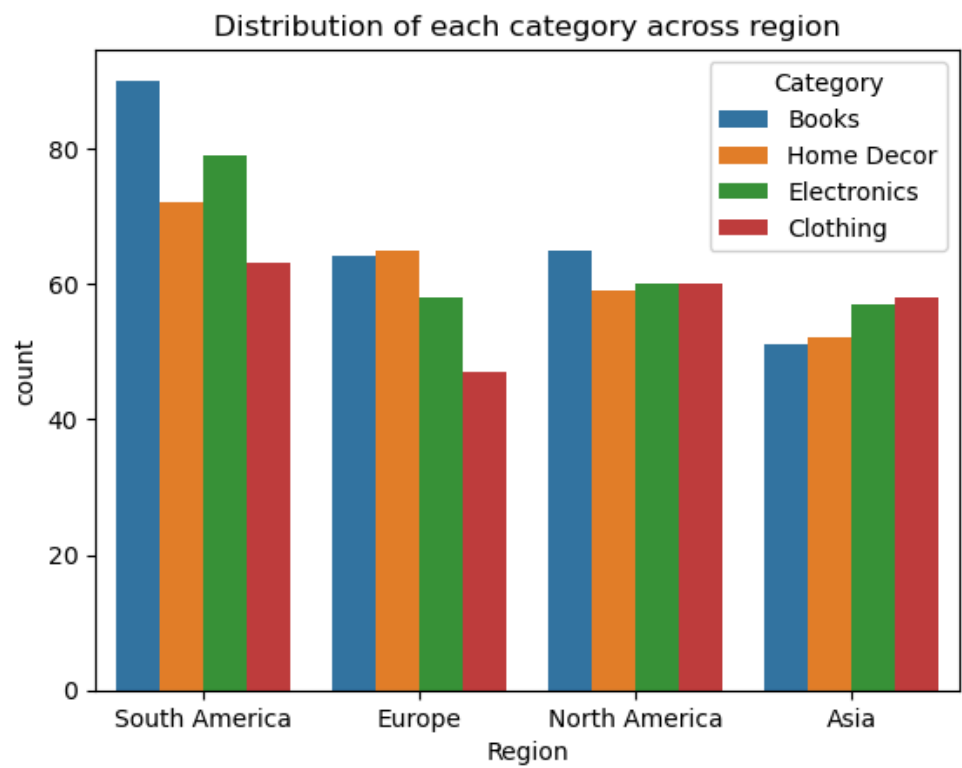
	TransactionID	CustomerID	ProductID	TransactionDate	Quantity	TotalValue	Price
0	T00001	C0199	P067	2024-08-25 12:38:23	1	300.68	300.68
1	T00112	C0146	P067	2024-05-27 22:23:54	1	300.68	300.68
2	T00166	C0127	P067	2024-04-25 07:38:55	1	300.68	300.68
3	T00272	C0087	P067	2024-03-26 22:55:37	2	601.36	300.68
4	T00363	C0070	P067	2024-03-21 15:10:10	3	902.04	300.68

Business Insights:

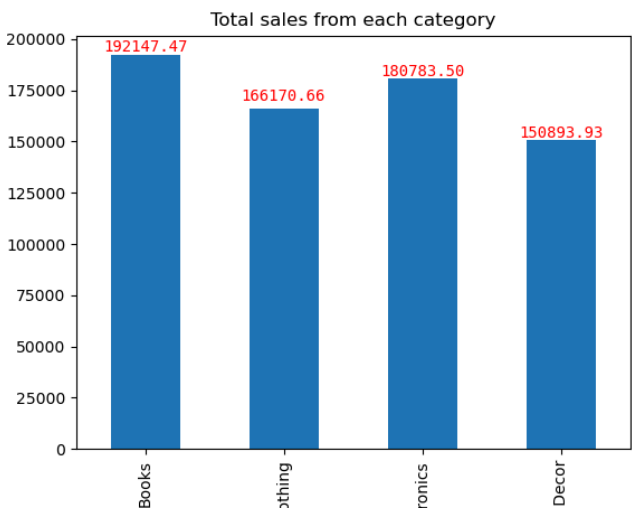
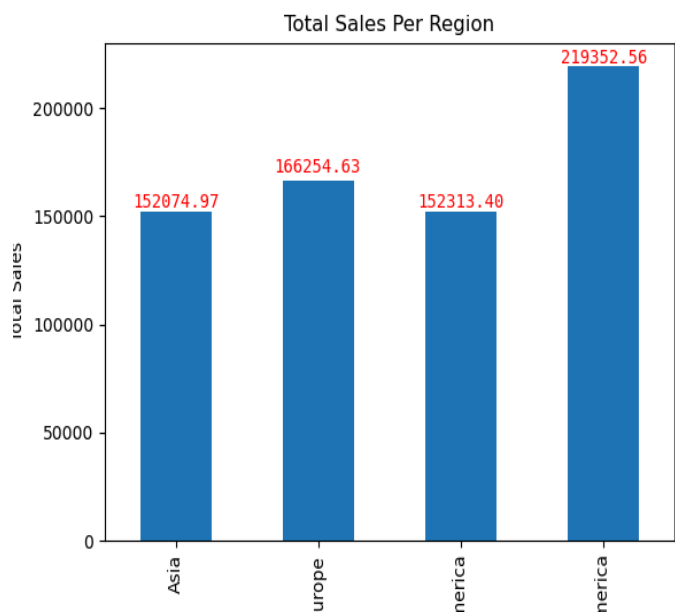
- 1. South America has the highest customer distribution among the regions, while Asia has the lowest. Additionally, customer sign-ups have steadily increased over the years, with a significant peak observed in 2024. This indicates strong regional engagement in South America and growing customer acquisition momentum, suggesting that 2024 is a pivotal year for scaling business efforts.



Category Distribution Across Regions



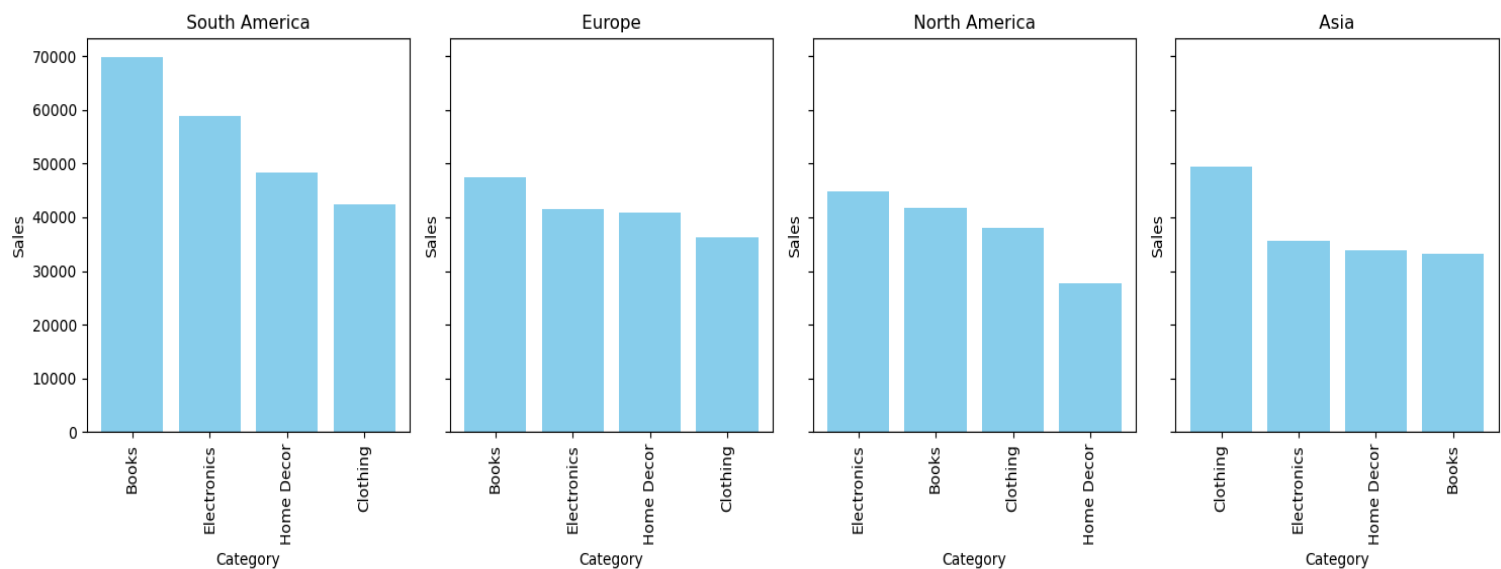
2. North America leads in total sales across regions, contributing the highest revenue (\$219,352.56), followed by Europe. In terms of product categories, "Books" generates the most revenue (\$192,147.47), while "Decor" has the lowest revenue among the listed categories. This suggests a strong regional and category-specific demand, emphasizing North America and "Books" as primary growth drivers.



3 . "Sales Across Categories and Regions"

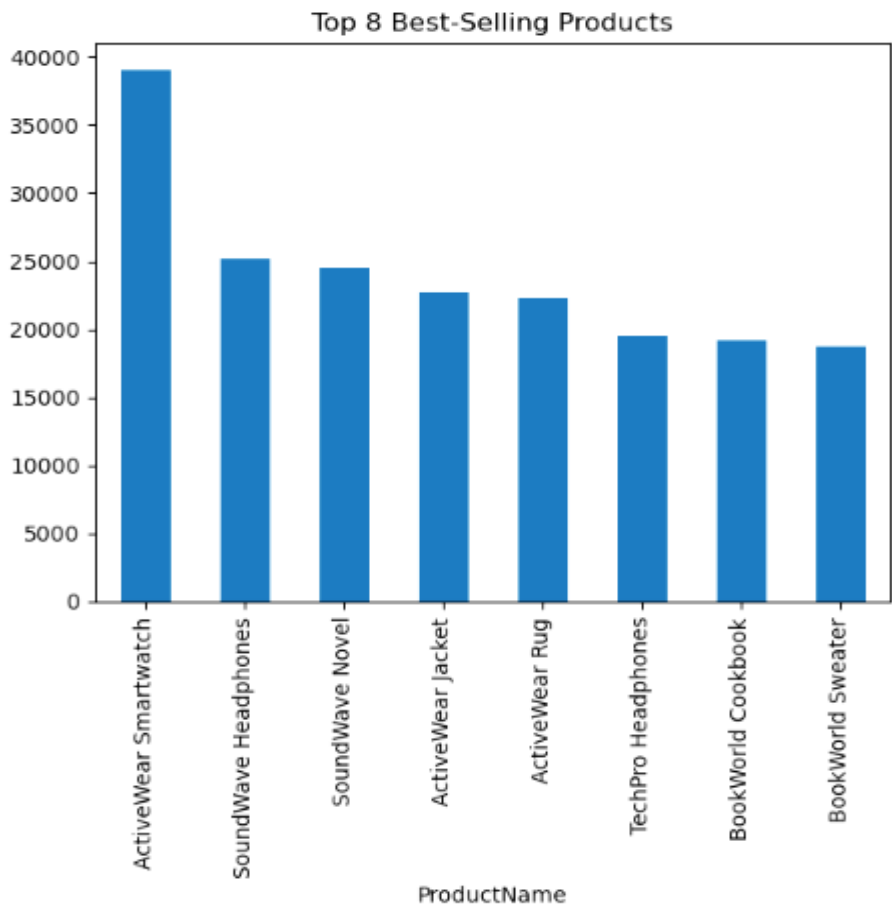
- 1. **South America** leads in "Books" sales, making it the region's top category, followed by "Electronics."
- 2. In **Europe**, sales are evenly distributed among all categories, with no dominant leader.
- 3. **North America** prioritizes "Electronics" and "Books," with other categories trailing closely behind.
- 4. **Asia** has "Clothing" as the top sales driver, distinguishing itself from other regions.

These insights can help guide targeted marketing strategies, regional product focus, and inventory decisions.



4. Top 8 Best-Selling Products

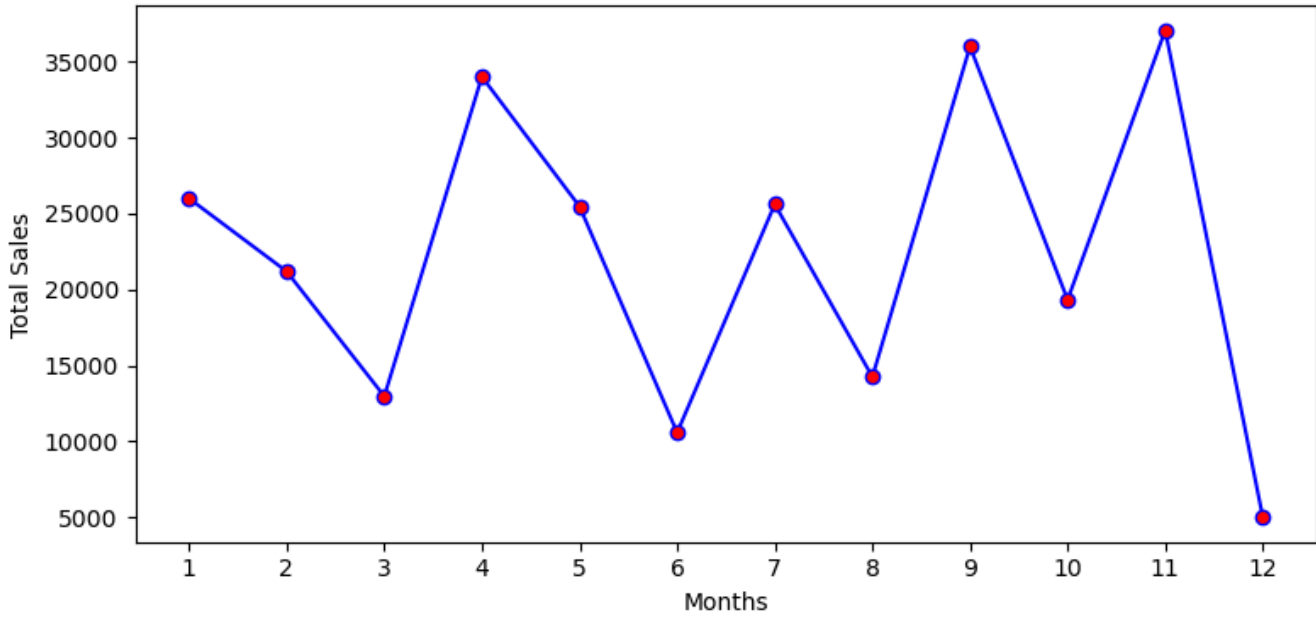
- The **ActiveWear Smartwatch** is the most sold product, significantly outperforming others.
- **SoundWave Headphones** and **SoundWave Novel** are the next highest sellers, indicating a strong preference for tech and media products.
- Products like **BookWorld Sweater** and **BookWorld Cookbook** rank lower, showing limited appeal compared to wearable and tech-related products.



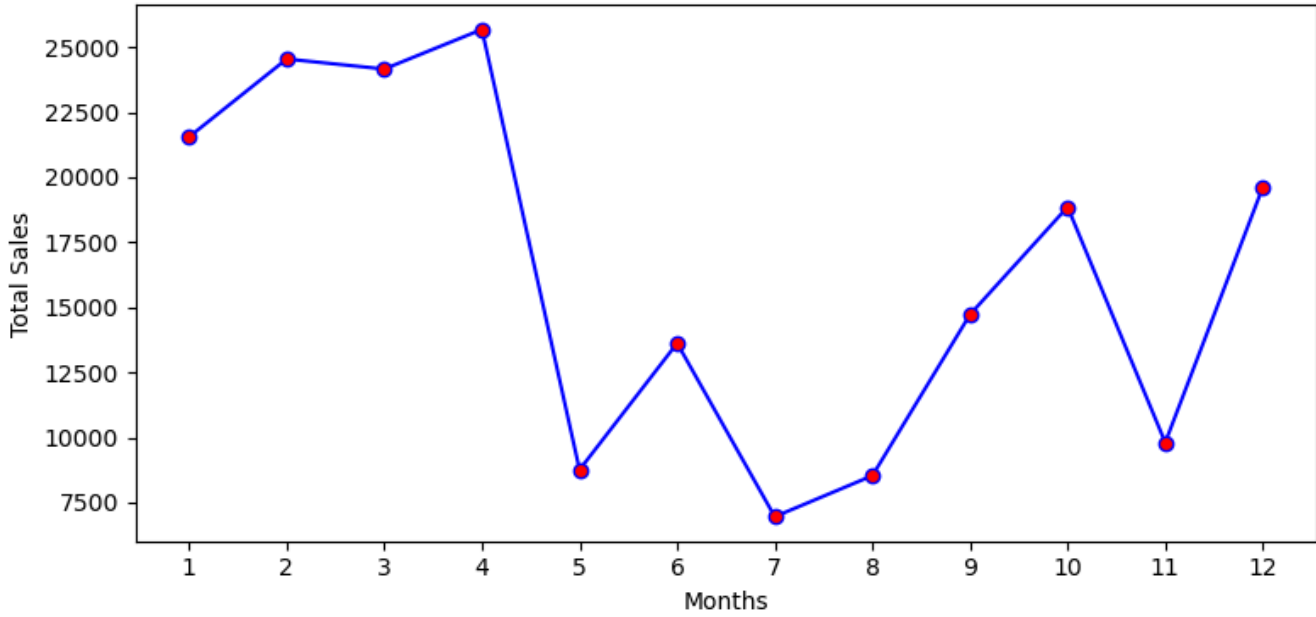
5. Sales Trends and Key Opportunities (2022-2024):

- **2024:** Volatile sales with peaks in **April, September, November**, but a sharp drop in **December** needs investigation.
- **2023:** Peaks in **March-April**, steep drop in **May**, gradual recovery, and strong **December**.
- **2022:** Sales peak in **May**, decline sharply, and rebound in **November-December**.
- Strong sales in **March-April** and **November-December** across years, except for **December 2024**.
- Focus on improving weak months like **July** and addressing **December 2024** anomalies.

Sales in 2024



Sales in 2023



Sales in 2022

