

## Exploratory Data Analysis and Business Insights

The reason for these plotting and particular insights are for the better understanding of the data and for improving the business, As “Picture speaks more words than a sentence”

Each insight detail will be like answers for these three questions

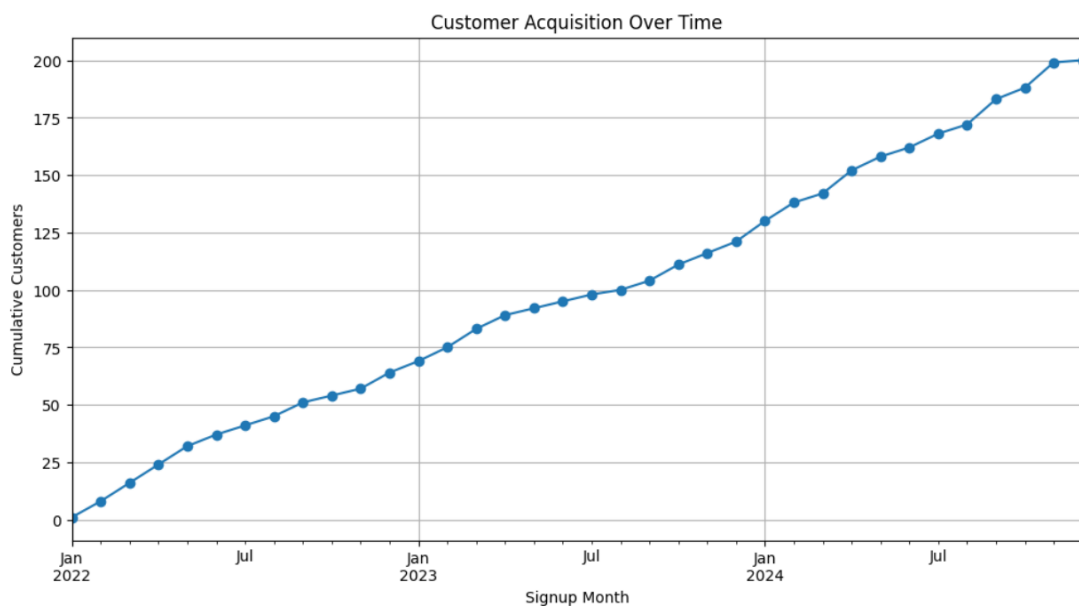
What is this?

Why is this?

How is this useful?

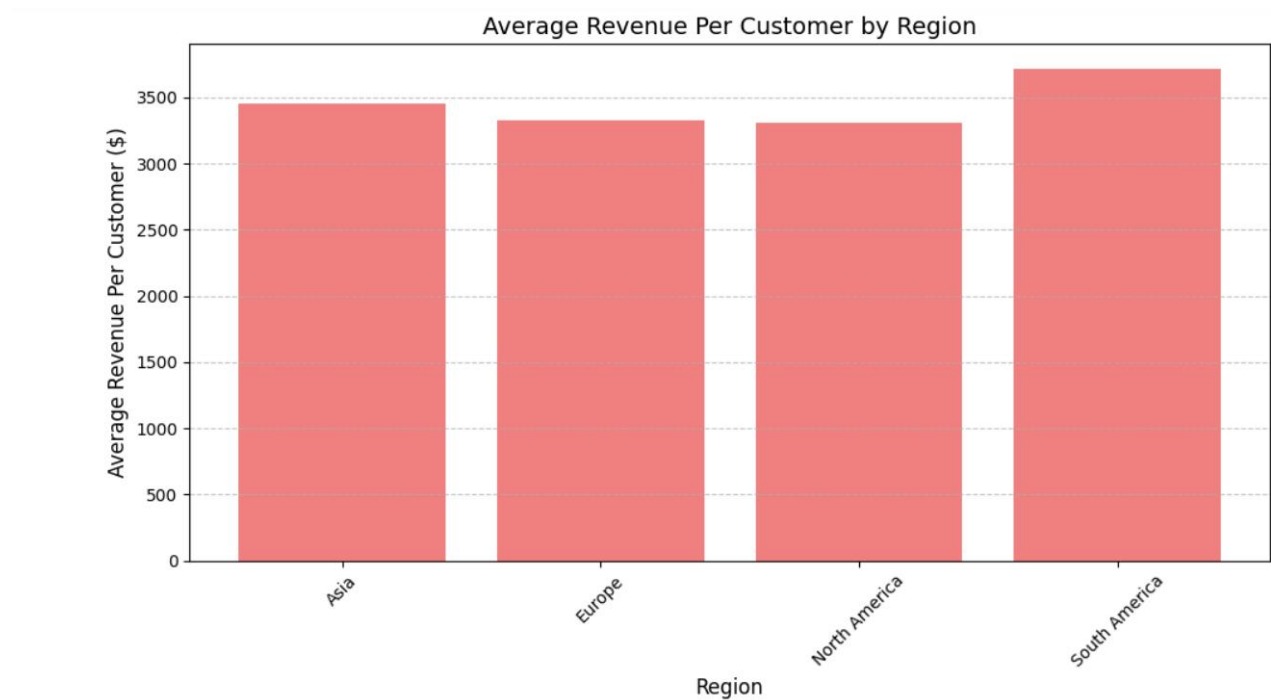
Here are the Insights I’ve made from the datasets provided

### **1. Customer Aquisition Overtime:**



- This chart Represents the Cumulative Number of customers acquired each month Over a period.
- Tracking customer acquisition is vital for understanding business growth and assessing the effectiveness of marketing and acquisition strategies.
- This shows steady growth, helping predict future customer expansion and guide scaling efforts.

## 2. Average Revenue Per Customer by Region



- **What is this?**

This chart shows the average revenue per customer for each region: Asia, Europe, North America, and South America.

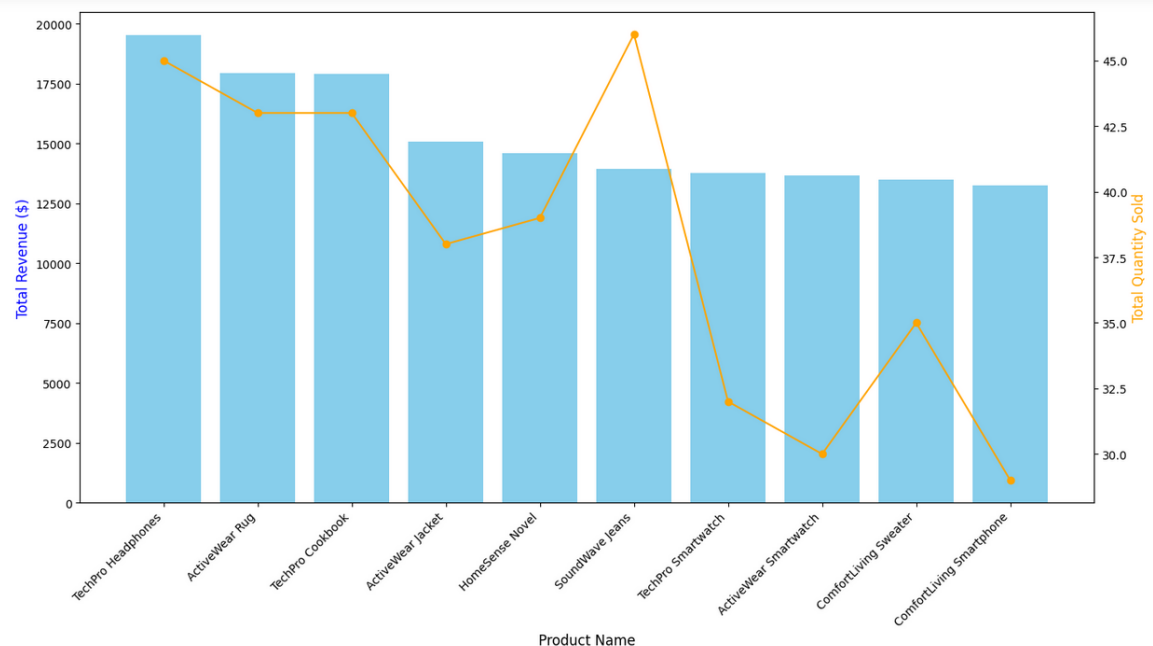
- **Why is this?**

Understanding regional differences in revenue helps identify the most profitable markets and areas requiring more targeted investment or strategy adjustments.

- **How is this Useful?**

It provides insights into where to focus marketing, pricing strategies, or resource allocation based on each region's customer value.

### 3. Top 10 Products by Revenue and Quantity Sold:



- **What is this?**

This chart shows the total revenue and quantity sold for each product, with a bar chart representing revenue and a line chart showing the quantity sold.

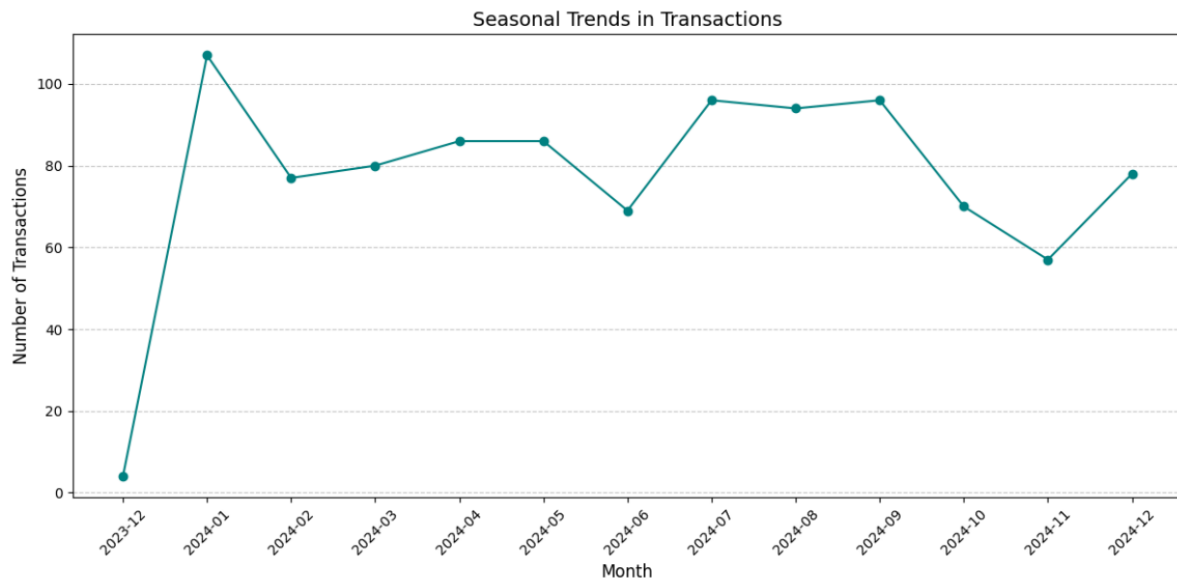
- **Why this?**

Analyzing both revenue and quantity sold for each product provides insights into which products are driving sales and how many units are moving, helping to understand product performance.

- **How it will be useful?**

This visualization highlights high-performing products in terms of both revenue and volume, allowing for targeted marketing, restocking, or product development decisions.

## 4. Seasonal Trends in Transactions:



- **What is this?**

This chart shows the number of transactions per month, highlighting seasonal fluctuations over time from December 2023 to December 2024.

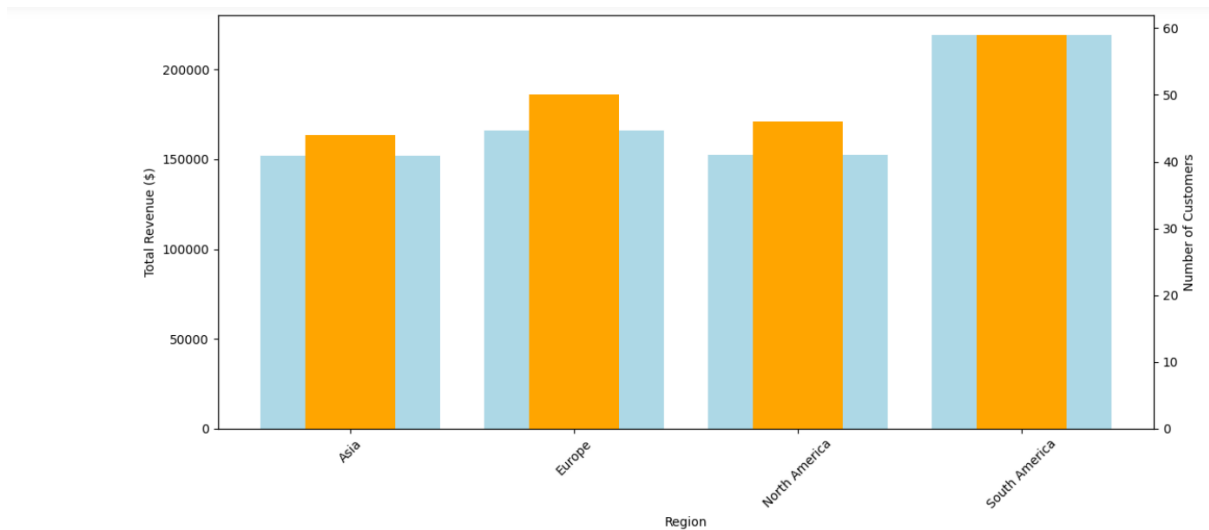
- **Why this?**

It helps to identify patterns in customer transactions, allowing businesses to pinpoint peak months and plan promotions or inventory accordingly.

- **How it will be useful?**

By recognizing high and low transaction periods, the business can optimize marketing efforts, adjust inventory, and improve customer targeting to maximize sales during peak months.

## 5.Summary-Revenue vs Customer Engagement by Region



- **What is this?**

This chart shows the **total revenue** and the **number of customers** in each region, highlighting the balance between sales and customer reach.

- **Why this?**

It helps assess the effectiveness of regional sales strategies by comparing revenue against customer numbers to identify high-revenue areas and low customer engagement.

- **How it will be useful?**

If a region shows **high revenue but fewer customers**, the focus can shift to attracting more customers. Conversely, regions with **many customers but lower revenue** may benefit from targeted sales strategies or higher-value product offerings.