Here are five insights derived from the exploratory data analysis (EDA) performed on the Customers and Transactions datasets.

1. Regional Distribution of Customers

The bar chart reveals that South America has the highest number of customers, followed by Europe, North America, and Asia. This indicates that South America is a key market for the business. However, the relatively lower customer base in Asia suggests an opportunity for targeted marketing campaigns to expand in that region.

2. Monthly Sales Trends

The line graph of total sales over time shows significant fluctuations throughout 2024. Sales peaked in January and mid-year months like June and August, but declined in February, September, and November. These trends may correspond to seasonal factors or promotional campaigns. Businesses can leverage this insight to optimize inventory and marketing efforts during high-demand periods.

3. Customer Signup Patterns

From the Customers dataset, signup dates indicate a steady influx of new customers across all regions over time. However, there is a notable increase in signups during early 2024. This could be attributed to successful marketing efforts or favorable market conditions during that period.

4. High-Value Transactions

Analysis of the Transactions dataset highlights that certain products (e.g., P067 and P057) contribute significantly to total sales due to their higher price points or frequent purchases. Identifying these high-performing products allows the business to prioritize their promotion and ensure adequate stock availability.

5. Regional Sales Contribution

By linking customer regions with transaction data, it is evident that South America not only has the largest customer base but also contributes significantly to total sales. However, Europe and North America show competitive sales figures despite having fewer customers, suggesting higher average transaction values in these regions.