EDA REPORT

The following business insights were obtained after performing a detailed EDA:

1. Product and Overall Sales Analysis

- ActiveWear products dominate the top 10 list, occupying four out of the top ten spots, indicating strong demand for fitness-related products.
- Tech and reading-related products, such as smartwatches, headphones, and textbooks, highlight diverse consumer interests.
- A long tail effect in sales suggests a wide variety of products with varying popularity.
- South America generates the highest revenue, followed by Europe. Category-wise, Books and Electronics dominate revenue generation.

2. Daily and Hourly Sales Analysis

- Weekday revenue peaks on Wednesday, with a decline from Thursday to Saturday. Saturday shows the lowest revenue, reflecting a specific weekly cycle.
- Weekend revenue is significantly lower than weekdays, possibly due to reduced demand or business activity.
- Hourly analysis shows distinct peaks, indicating specific times of high purchasing activity.

3. Monthly and Quarterly Sales Analysis

- Regional revenue trends vary across the year, with seasonal demand, local economic conditions, or preferences influencing revenue peaks.
- A strong seasonal pattern emerges, with revenue increasing from Q1 to Q3, peaking in Q3, and dropping sharply in Q4.

4. RFM Analysis

- High monetary value customers tend to have lower recency, reflecting loyalty and frequent purchases.
- At-risk customers (high monetary, high recency) suggest potential churn, requiring retention strategies.
- High-value customers highlight loyalty, and their retention should be prioritized.
- Low-value customers might indicate high customer acquisition costs relative to CLTV, suggesting unprofitable customer acquisition.

5. Time to First Purchase Analysis

- Many customers take a long time (hundreds of days) for their first purchase, indicating inefficiencies in onboarding.
- 62 customers with negative TimeToFirstPurchase suggest data entry errors that require investigation.
- A long tail in the distribution hints at potential drop-offs during onboarding due to friction points or lack of engagement.