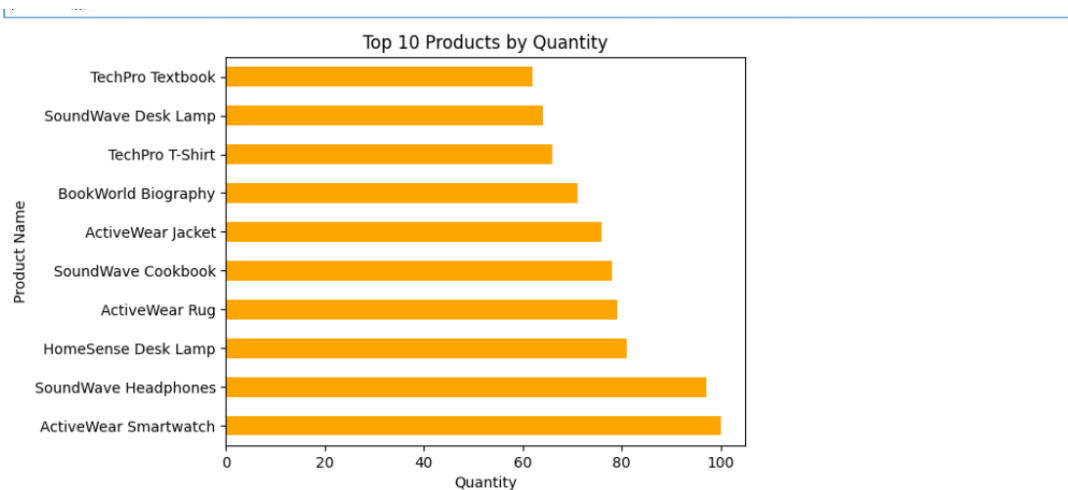


1.Top 10 Products by Quantity

- **ActiveWear Smartwatch** has the highest quantity, followed by **SoundWave Headphones**.
- **TechPro Textbook** has the lowest quantity.
- **ActiveWear Jacket** and **SoundWave Cookbook** have the same quantity.
- The other products have distinct quantities.

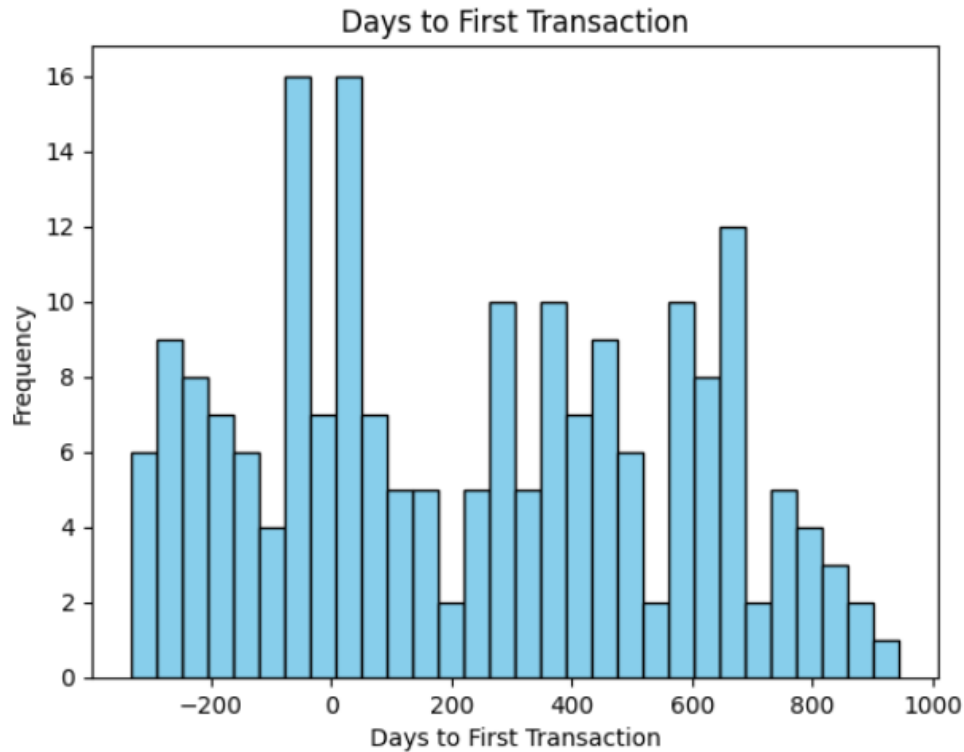


2. Interpretation of Days to First Transaction Histogram

1. **Early Engagement:** Many customers make their first transaction within the first 100 days, highlighting the importance of early engagement.
2. **Gradual Decline:** As time goes on, fewer customers make their first transaction, indicating a drop in conversion.
3. **Long-Tail Behavior:** Some customers take up to 1000 days to make a purchase, suggesting the need for targeted outreach.

Insights

1. **Marketing Strategies:** Focus on **early engagement** with targeted offers and incentives to boost first purchases within the first 100 days.
2. **Customer Segmentation:** Address **long-tail customers** with personalized campaigns, as they may need different triggers to convert.
3. **Customer Retention:** Compare retention between early and late purchasers to tailor retention strategies and nurture long-term loyalty.



3 .Region-wise Category Distribution (with Percentages)

1. Electronics Dominates Across Regions:

- **Electronics** consistently holds the highest share of transactions in all regions, with percentages ranging from **24.2%** in North America to **26.6%** in Asia. This indicates a strong, global demand for electronic products.

2. Books Lead in South America:

- In South America, **Books** stand out with the highest percentage of transactions at **29.6%**, which suggests a potential market trend where reading materials or educational products are more popular in this region compared to others.

3. Clothing Category:

- **Clothing** shows varying demand across the regions. It has the highest share in **Asia** (26.6%) but is the least dominant category in **Europe** (20.1%). This reflects regional preferences, with clothing being a significant part of consumer spending in Asia and less so in Europe.

4. Home Decor Consistently Low:

- **Home Decor** has the lowest percentage in all regions, hovering between **23.7%** and **23.9%**. This suggests that, while important, it is less of a priority for consumers compared to categories like electronics and clothing.

5. Regional Variations:

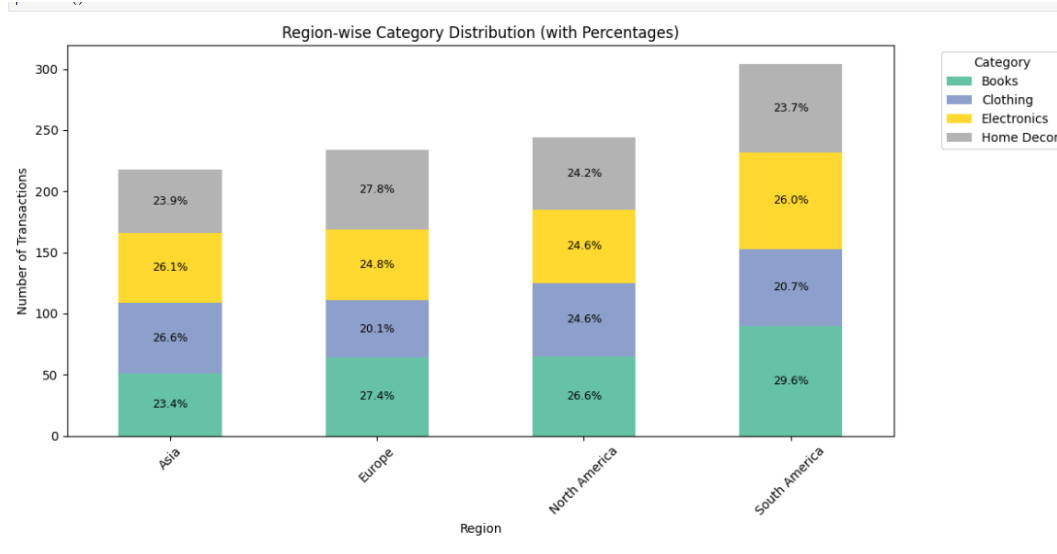
- While **Electronics** maintains a strong presence globally, the **Books** category's prominence in South America and the shift in the **Clothing** category's share between Asia and Europe reflect important cultural or economic differences that could influence marketing and product strategies.

6. Category Performance Across Continents:

- In **Asia** and **North America**, the distribution across the categories (Books, Clothing, Electronics, Home Decor) is fairly balanced, with only small deviations.
- In **Europe**, **Home Decor** has a slightly higher proportion (27.8%) compared to **Clothing** (20.1%), suggesting a higher interest in home-based products.
- South America** shows **Books** with a higher preference than other regions, hinting at cultural or regional consumption trends in reading or educational materials.

Conclusion:

The distribution of categories across regions highlights varying consumer preferences and market demands. **Electronics** consistently leads, but regional shifts in preference for **Books**, **Clothing**, and **Home Decor** suggest tailored strategies for different regions could be beneficial for businesses. These insights can guide inventory management, targeted marketing campaigns, and product launches specific to each region.



4.Key Insights from Total Sales by Region and Category:

1. South America:

- Books** lead with the highest sales at **69.8k** (45.9% of total sales), significantly contributing to the region's total.

- **Electronics** follow with **58.8k** (38.6%), while **Clothing** and **Home Decor** have a balanced share at **25.5%** and **22.0%**, respectively.

2. Asia:

- **Clothing** tops the category with **49.4k** (29.7% of total sales).
- **Electronics** follows closely at **35.7k** (23.4%).
- **Books** and **Home Decor** account for **21.8%** and **15.5%**, respectively.

3. Europe:

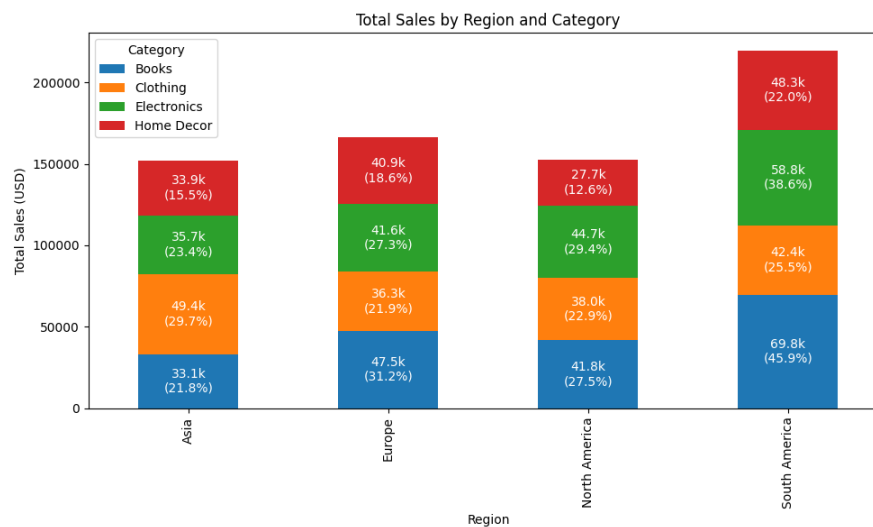
- **Books** lead with **47.5k** (31.2%), followed by **Electronics** at **41.6k** (27.3%).
- **Clothing** and **Home Decor** are more balanced, contributing **21.9%** and **18.6%**, respectively.

4. North America:

- **Electronics** is the highest-selling category at **44.7k** (29.4%), with **Books** and **Clothing** at **27.5%** and **22.9%**, respectively.
- **Home Decor** has the lowest share at **12.6%**, contributing **27.7k**.

Summary:

- **South America** has the highest sales in **Books** and **Electronics**, with **Books** being the leading category overall.
- **Asia** sees the highest sales in **Clothing**, while **Europe** shows a balanced distribution with **Books** and **Electronics** leading.
- **North America** has the highest sales in **Electronics**, but **Home Decor** is the least performing category across regions.



5. Monthly Sales Trend by Category

The graph shows the monthly sales trend for four different categories: **Books, Clothing, Electronics, and Home Decor**.

Key Observations:

- **Books:** Experienced a significant surge in sales in January and February, followed by a decline in March and April. Sales saw a slight increase in May and June and a steady decline thereafter.
- **Clothing:** Showed a steady increase in sales from December to April, peaking in May. Sales declined consistently afterward.
- **Electronics:** Sales remained steady in December and January, followed by a sharp increase in February and March. They experienced a gradual decline from April through November, with a slight uptick in December.
- **Home Decor:** Experienced a sharp increase in sales from December to January, followed by a gradual decline till February. There was a slight increase in March, followed by a decline until April. There was a slight uptick in sales in June and July, but the trend continued to decline thereafter.

Overall, the graph suggests that sales for all four categories were strongest in the first quarter of the year. The trends for each category varied throughout the rest of the year.



6. Key Insights from Monthly Sales Trend by Region:

1. Asia:

- **Sales surge in January 2024:** Asia experienced a significant spike in sales, reaching **19,429.97 USD** in January.

- **Consistent sales fluctuations:** Sales in Asia saw fluctuations throughout the year, with notable peaks in **July** (19,755.79 USD) and a dip in **December** (12,907.85 USD).
- **Moderate sales in early months:** December 2023 and February 2024 showed lower sales compared to later months.

2. Europe:

- **Stable growth with some peaks:** Europe experienced relatively consistent growth, peaking in **January 2024** (19,287.27 USD) and **September 2024** (19,084.72 USD).
- **Lower sales in November 2024:** Sales decreased significantly in **November** (7,780.79 USD) and **October** (9,101.74 USD), which were the lowest values for the year.
- **No major drops in sales:** Europe's trend remained steady, with moderate increases across the months, especially between May and September.

3. North America:

- **Steady increase in sales in early months:** North America's sales steadily increased from **December 2023** (911.44 USD) to a peak in **April 2024** (22,969.02 USD).
- **Significant dip in June:** North America's sales dropped significantly in **June** (7,644.90 USD), before recovering in subsequent months.
- **Peak in March 2024:** North America had a major peak in **March 2024** at 14,974.31 USD, reflecting high sales in early spring.

4. South America:

- **Strong early-year performance:** South America's sales saw a sharp increase in **January 2024** (15,381.88 USD) and continued to stay strong through **May 2024**.
- **Decline in mid-year:** Sales dipped between **June** and **October** but showed a recovery in **November** and **December**.
- **Highest sales in July:** South America reached its highest sales point in **July 2024** (27,602.77 USD), and consistently showed growth after the mid-year dip.

Overall Trends:

- **January** showed high sales across all regions, especially in **Asia**, **Europe**, and **South America**.
- **July** had the strongest month for **South America** while **Asia** also had notable peaks.
- **North America** and **Europe** showed consistent, though slightly lower, sales in comparison to the sharp rise in **South America**.
- **Sales fluctuations** were evident in **Asia**, **North America**, and **South America**, but **Europe** maintained steadier sales growth.

2024-12 12907.85 17556.01 10350.75 18234.59

