

EDA INSIGHTS

Insight 1: Revenue by Product Category

- The analysis of revenue by product category reveals that the "**Books**" category generates the highest revenue (\$190k), followed by "**Electronics**" (\$180k), "**Clothing**" (\$170k), and "**Home Decor**" (\$150k).
- This indicates that **Books** and **Electronics** are key revenue drivers, while **Home Decor** has relatively lower performance.
- Businesses should focus on leveraging the popularity of **Books** and **Electronics** while exploring strategies to boost sales in **Home Decor**.

Insight 2: Top-Selling Products

- The top-selling products by quantity include "**SoundWave Jeans**" and "**SoundWave Cookbook**", each with **46 units sold**, followed closely by "**TechPro Headphones**" (**45 units**) and "**ActiveWear Rug**" (**43 units**).
- Products like "**HomeSense Desk Lamp**" and "**ActiveWear Smartphone**" also show significant sales, indicating a diverse set of high-demand items across different categories.

- This highlights a balanced mix of product categories driving sales, suggesting that businesses should maintain optimal inventory levels for these popular products to meet demand efficiently and avoid stockouts.

Insight 3: Customer Distribution by Region

- The customer base is distributed across four regions, with the highest percentage in **South America (29.5%)**, followed by **Europe (25%)**, **North America (23%)**, and **Asia (22.5%)**.
- This suggests **South America** as the largest market, but other regions also contribute significantly to the overall customer base.
- Businesses can focus on regional marketing strategies to address customer preferences and expand in less dominant regions like **Asia** and **North America**, where growth potential may be higher.

Insight 4: Monthly Revenue Trends

- The line graph depicts **monthly revenue trends** from **January 2024 to November 2024**.
- **Revenue** saw a significant surge in **January**, followed by a decline and then fluctuating growth throughout the year.
- Notably, there was a peak in **July** and a subsequent dip in **November**.
- This indicates that January might be a strong sales month, potentially due to seasonal factors, while July sees a mid-year boost. November, on the other hand, shows a decline, which could signal a need for end-of-year strategies to sustain growth.

Insight 5: Identifying Customer Loyalty and Product Success

- The bar chart illustrates the **repeat purchase frequency** for the **top 10 products**.
- **ActiveWear Smartwatch** and **SoundWave Headphones** exhibit the highest repeat purchase rates, suggesting **strong customer satisfaction** and **loyalty**.
- In contrast, products like **BookWorld Biography** and **ActiveWear Rug** have lower repeat purchases, suggesting potential areas for improvement in **product design** or **marketing strategies**.
- Analyzing **customer demographics** and preferences for products with high repeat purchase rates could provide valuable insights for **inventory management**, **marketing campaigns**, and **product development**.

Insight 6: Correlation Analysis Between Quantity, Total Value, and Price

- **Quantity** and **TotalValue**: **Strong positive correlation** (0.61). This means that as the quantity of items purchased increases, the total value of the transaction tends to increase as well.
- **TotalValue** and **Price**: **High positive correlation** (0.72). This indicates that higher-priced items generally result in **higher total transaction values**.
- **Quantity** and **Price**: **Weak correlation** (-0.01). This suggests that the quantity of items purchased is not significantly influenced by the price of individual items