

Business Insights After Performing EDA on Product, Customer and Transaction CSV Files:

1. **Abigail Jones, with the highest number of transactions (11),** presents a key opportunity for customer loyalty initiatives. Her frequent purchases across multiple product categories—such as Clothing, Home Decor, and Electronics—indicate a strong brand preference and consistent engagement. This suggests she is a repeat buyer, and personalized marketing strategies could further increase her lifetime value. **Targeting her with exclusive offers or early access to new products could strengthen her relationship with the brand.** Additionally, analyzing the variety of products she buys might help optimize inventory and promotional strategies to cater to similar high-value customers.
2. The product **SoundWave Jeans (ProductID: P059) has emerged as the highest-selling item** with a total of **46 units sold**, indicating strong customer demand. This highlights a significant market preference for this product, making it a key focus for marketing and inventory strategies. The high sales volume suggests that SoundWave Jeans could be a potential flagship product, suitable for targeted promotions or bundling with other products. Additionally, understanding the demographics and purchase behaviors of customers who buy this product can help tailor future marketing campaigns and optimize stock levels to meet continued demand.
3. The regional customer distribution highlights key market insights. **South America leads with 30.4%** of customers, presenting opportunities for localized promotions and product expansions. **North America follows with 24.4%**, offering a solid base for loyalty programs and increased market penetration. **Europe accounts for 23.4%**, indicating a competitive market with growth potential. **Asia, with 21.8%**, represents an untapped market that could benefit from region-specific products and targeted marketing strategies. These regional insights help prioritize strategic efforts, guiding tailored campaigns, inventory management, and expansion initiatives to maximize growth in each region.
4. **Joshua Preston, the most recent customer (CustomerID: C0182),**

signed up on 2024-12-28, indicating that the business is attracting new customers. This suggests ongoing marketing efforts and potential for future growth. On the other hand, **Jacob Holt, the oldest customer (CustomerID: C0118), joined on 2022-01-22, representing long-term customer retention.** This highlights a strong foundation of loyal customers. Analyzing the behavior of both recent and long-standing customers can help refine marketing strategies, with a focus on increasing retention for newer customers like Joshua, while nurturing the loyalty of established ones like Jacob.

5. The product category demand distribution reveals key insights into customer preferences: The product category demand distribution reveals key insights into customer preferences. **Books lead with 27% of demand**, suggesting a strong market for reading materials, with room for expanding offerings. **Electronics follow with 25.4%**, indicating high customer interest and a focus area for marketing. **Home Decor accounts for 24.8%**, reflecting steady demand in home-related products, ideal for diversifying the product range. **Clothing makes up 22.8%**, showing consistent fashion demand. These insights provide valuable direction for prioritizing marketing efforts, optimizing inventory, and planning product expansions to better meet customer needs and maximize sales across these categories.
6. The **total revenue of \$689,995.56** is distributed across four key product categories. **Books contribute 27.8% of the revenue**, amounting to **\$191,219.37**, reflecting strong demand in this category. **Electronics generate 26.2%, or \$180,517.58**, indicating a high-demand segment. **Clothing accounts for 24.1%, totaling \$166,738.68**, showcasing steady sales in the fashion category. Lastly, **Home Decor contributes 21.9%, around \$151,878.62**, highlighting a solid performance. This revenue breakdown helps prioritize marketing and inventory strategies, focusing on the highest-revenue categories while also exploring growth opportunities in home decor and clothing.
7. The Customer Lifetime Value (CLV) analysis highlights the top customers contributing significantly to the business. Customer C0082 leads with a CLV of \$19,917.79, demonstrating exceptional long-term value. This indicates strong customer loyalty and repeat purchases, marking them as a crucial asset for the business. Other top customers like C0141 and C0104, with CLVs of \$19,710.11 and \$18,962.23, also show substantial value. Recognizing these high-value customers helps prioritize retention strategies, personalized marketing, and loyalty programs to foster ongoing relationships. By focusing on such

customers, businesses can ensure sustained growth and profitability.