Detailed Business Insights from EDA

1. Customer Distribution:

The analysis of customer distribution highlights that customers are spread across multiple regions globally. Regions like Asia and South America have a notable share of customers, indicating these as strong markets. Other regions with lower customer representation present opportunities for expansion. By tailoring marketing strategies and addressing region-specific preferences, businesses can attract new customers. Furthermore, understanding cultural differences and region-specific demands could help design personalized products or services. Overall, this regional analysis serves as a foundation for geographic growth strategies to tap into less represented areas.

2. Transaction Value Distribution:

The transaction value distribution shows a majority of transactions at moderate value levels, reflecting consistent purchasing patterns for mid-priced items. However, a subset of high-value transactions suggests premium products or bulk purchases are driving significant revenue. This underscores the importance of maintaining a diverse pricing strategy to capture different customer segments. Businesses should analyze what drives high-value purchases-whether it's product quality, bundle offers, or discounts-and replicate those strategies. Focusing on customer groups responsible for these purchases can help optimize sales performance and improve overall profitability.

3. Price vs Total Value Correlation:

The correlation between product price and total transaction value indicates that higher-priced items contribute disproportionately to revenue. This suggests a demand for premium products, making them a crucial area of focus. Businesses should ensure the availability of such products and explore adding premium variations to existing categories. Promotional campaigns targeting affluent customers could boost sales further. While premium products excel, maintaining a balance with affordable offerings is essential to appeal to a wider customer base and sustain long-term growth

across all segments.

4. Sales by Product Category:

Electronics, Books, and Clothing are the top-performing product categories in terms of sales, indicating strong customer interest in these areas. These categories should receive prioritized marketing, inventory, and promotional efforts. Conversely, categories with lower sales should be reassessed for product relevance, pricing, or marketing effectiveness. Seasonal or event-based campaigns could also revive underperforming categories. Diversifying product offerings within popular categories might further enhance sales. Overall, category performance analysis provides actionable insights for inventory planning and marketing focus.

5. Customer Signup Trends:

The upward trend in customer signups reflects growing brand visibility and customer interest. Spikes during specific months suggest effective marketing campaigns or seasonal demand. Businesses should analyze these patterns to identify what drives signups, such as promotions, product launches, or social media activity. Optimizing campaigns during peak signup periods and replicating successful strategies during slower months can sustain growth. Retaining these new customers is equally critical-introducing loyalty programs or follow-up engagements can ensure long-term customer relationships and steady revenue growth.