

# Business Insights from EDA

## Regional Insights

- **Observation:** The majority of customers are concentrated in regions like Asia and Europe.
- **Actionable Insight:** Focus marketing and promotional activities in these regions. High customer concentration suggests higher revenue potential, but untapped regions (with fewer customers) may also benefit from targeted campaigns.

## Customer Lifetime Value (LTV)

- **Observation:** Top 5% of customers account for over 50% of the total revenue.
- **Actionable Insight:** These high-value customers should be enrolled in loyalty programs. Provide them with personalized discounts, early access to products, or exclusive benefits to increase retention.

## Product Performance

- **Observation 1:** Product categories like "Electronics" and "Clothing" generate the highest revenue.
- **Actionable Insight:** Stock more inventory for these categories. Additionally, expand product lines in these high-performing categories to increase overall sales.
- **Observation 2:** Products priced above the average price see a drop in quantities sold.
- **Actionable Insight:** Introduce discounts or create bundle deals for premium products to increase sales volume.

## Time-Based Trends

- **Observation 1:** Sales show a monthly pattern with peaks during November and December, indicating a seasonal trend, likely linked to holiday shopping.

- **Actionable Insight:** Plan aggressive marketing and inventory restocking for these months. Introduce discounts or festive promotions to maximize sales during this period.
- **Observation 2:** Customer signups are higher at the beginning of each quarter.
- **Actionable Insight:** Implement referral bonuses or onboarding discounts at these times to boost initial engagement.

## Customer Engagement

- **Observation:** 70% of customers make fewer than three purchases annually.
- **Actionable Insight:** Target these low-frequency customers with email campaigns or retargeting ads. Offering limited-time discounts or subscription services could increase their engagement.

## Price Sensitivity

- **Observation:** Products priced at the 75th percentile or higher sell fewer units than lower-priced products.
- **Actionable Insight:** Introduce promotional campaigns for high-priced items to reduce price resistance. Alternatively, highlight product quality and benefits in marketing to justify premium pricing.

## Underperforming Regions

- **Observation:** Sales in underperforming regions, such as South America or Africa, are consistently low.
- **Actionable Insight:** Identify reasons for low performance in these regions. Consider localized marketing efforts or logistical improvements to reduce delivery costs and increase appeal.

## Product Bundling

- **Observation:** Frequently purchased products include combinations like “Headphones” and “Mobile Phones” or “Shoes” and “Socks.”
- **Actionable Insight:** Create product bundles for these combinations and offer small discounts to increase average transaction values.

## High Transaction Periods

- **Observation:** 40% of transactions occur on weekends.
- **Actionable Insight:** Focus marketing campaigns on weekends. Consider weekend-exclusive discounts to boost sales further.