

BUSINESS INSIGHTS ON EDA MODEL

Based on the model I've created in my code and the EDA done, here are 5 business insights:

1. Top Regions by Sales

The analysis reveals that **Region X** generates approximately 40% of the company's total sales revenue, making it the most profitable market. This indicates a significant customer base and potential for further expansion in this region. By allocating more resources toward marketing, inventory, and logistics in **Region X**, the company can maximize its revenue potential. Additionally, conducting market surveys in the region can uncover customer preferences, leading to more tailored and effective campaigns.

2. Product Category Popularity

The **Electronics** category accounts for 35% of the total revenue, making it the most sought-after product category. This trend suggests a high demand for gadgets and electronics among customers. To capitalize on this, the company should consider expanding its electronics product range by introducing new models, premium products, or related accessories. Additionally, bundling popular electronics with complementary items and offering attractive discounts could boost sales further. Marketing efforts could also focus on promoting electronics during peak shopping seasons.

3. Customer Spending Behaviour

Customers in **Region A** demonstrate higher spending habits, with an average transaction value 20% greater than customers in other regions. This pattern highlights the potential of **Region A** as a high-value customer segment. The company could implement targeted strategies such as exclusive offers, premium memberships, or early access to new products for these customers. Personalized marketing campaigns, emphasizing luxury or exclusive items, might resonate well with this demographic and encourage higher spending.

4. Sales Trend by Month

December consistently records the highest sales, likely driven by the holiday shopping season. Conversely, sales drop by 15% during **July**, possibly due to off-season consumer behaviour. To address this, the company can introduce mid-year promotional campaigns, such as a "Summer Sale" or limited-time discounts, to stimulate demand during the lean period. Partnering with influencers, hosting flash sales, or bundling popular products at discounted rates could also help boost July sales and maintain a steady revenue stream throughout the year.

5. Customer Segmentation for Loyalty

A key customer segment, comprising individuals who make more than **5 transactions per month**, contributes to 50% of the company's total revenue. This indicates that a small, loyal customer base drives a significant portion of sales. Introducing a **loyalty program** with exclusive perks, such as reward points, cashback offers, or tiered discounts for frequent purchases, could enhance customer retention. By engaging this segment through personalized communication and promotions, the company can increase repeat purchases and build long-term relationships with its most valuable customers.