

Business Insights and Analysis Report for eCommerce Transactions

1. **Customer Segmentation**:

We performed customer segmentation using clustering techniques. The customer base was segmented into multiple clusters based on transactional and demographic data. This allowed us to identify distinct groups of customers with varying buying behaviors, such as high-value, frequent buyers versus low-frequency, low-value customers. The clustering model used, along with metrics like the DB Index, provides valuable insight into how different customer segments behave. These segments can be targeted with personalized marketing strategies, promotions, and products that match their preferences.

2. **Lookalike Model**:

A lookalike model was developed to recommend similar customers based on their transaction history and profile. By calculating cosine similarity, we identified top 3 similar customers for the first 20 customers. This model can be highly valuable for customer acquisition, as it helps businesses identify new potential customers who resemble their top-performing clients. The model's accuracy and quality can be further improved by incorporating more customer attributes, enhancing the business's ability to find high-converting prospects.

3. **Product Performance Insights**:

From the transactional data, we observed patterns regarding product categories and their performance across different customer regions. Certain categories performed better in specific regions, indicating regional preferences. This insight can drive region-specific marketing campaigns and help in inventory management, ensuring that popular products are available where they are most in demand.

4. ****Revenue Optimization****:

By analyzing customer transaction data, it was clear that a small proportion of customers contributed to the majority of the total revenue. Understanding this can help businesses focus efforts on nurturing high-value customers through loyalty programs or personalized offers. Moreover, we observed that offering bundle discounts for certain product categories increased the likelihood of higher transaction values. Optimizing pricing and offering targeted discounts can improve overall revenue generation.

5. ****Marketing Strategy****:

Analyzing customer sign-up trends and transaction histories helped in identifying potential seasonal peaks and trends. For example, certain regions had higher sign-up rates during particular months. By aligning marketing campaigns with these trends, businesses can enhance customer acquisition and retention efforts. Additionally, by focusing on customer profiles with high transaction frequency and spend, targeted marketing initiatives can be launched to maximize conversions.