

Lookalike Model Report for eCommerce Transactions

Objective

Develop a Lookalike Model to recommend similar customers based on their profiles and transaction history, enabling personalized marketing and improved customer engagement.

Methodology

1. Data Preparation:

- **Datasets Used:**

- ▢ Customers.csv: Profile data such as CustomerID, Region, and SignupDate.
- ▢ Transactions.csv: Transaction data including TotalValue, Quantity, and ProductID.

- **Merging Data:**

- ▢ Combined Customers and Transactions datasets to create a unified customer profile dataset.

- **Feature Engineering:**

- ▢ Aggregated key metrics such as:
 - ▢ Total Spending (TotalValue).
 - ▢ Total Quantity Purchased.
 - ▢ Average Transaction Value.
- ▢ Most Frequent Product Category.

2. Similarity Computation:

- Used **Cosine Similarity** to measure the similarity between customers based on their aggregated profiles.
- Normalized numerical features (e.g., TotalValue, Quantity) using **StandardScaler** for uniform scaling.

3. Top Recommendations:

- For each customer, identified the top 3 most similar customers, excluding themselves.

Visualizations and Metrics 1.

Heatmap of Similarity Scores

- **Description:**
 - A heatmap displaying similarity scores for the first 20 customers.
 - Helps visualize clusters of similar customers.
- **Key Observations:**
 - Customers with similar spending habits and category preferences tend to cluster together.

2. Recommendations for First 20 Customers

- **Sample Recommendations:**

- CustomerID SimilarCustomerID SimilarityScore

C0001	C0069	0.9324
C0001	C0154	0.9235
C0001	C0026	0.8875
C0002	C0029	0.9998
C0002	C0088	0.9848
C0002	C0062	0.9811

- **Key Patterns:**
 - High-spending customers tend to be grouped with others who frequently purchase high-value items.
 - Shared category preferences (e.g., Books or Electronics) heavily influence similarity scores.

Insights

2. Customer Clusters:

- Customers from the same region or with similar product preferences are more likely to have high similarity scores.

3. High-Value Customer Recommendations:

- Top spenders are often linked with others who have similar highvalue spending patterns.

3. Impact of Categories:

- Shared preferences for specific categories (e.g., Electronics) contribute significantly to customer similarity.

Recommendations

1. Personalized Marketing:

- Use lookalike recommendations to create targeted campaigns for customers with similar spending patterns.
- Example: Offer exclusive discounts to customers similar to highvalue spenders.

2. Upselling and Cross-Selling:

- Suggest products from the most frequently purchased categories of similar customers. ○ Example: Bundle items from Electronics and Books for customers with overlapping preferences.

3. Loyalty Programs:

- Focus on retaining high-value clusters by offering loyalty rewards and personalized offers.
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Summary

The Lookalike Model leverages customer profiles and transaction history to identify similar customers, facilitating highly targeted and effective marketing strategies. With actionable insights from the recommendations, businesses can enhance customer engagement, improve retention, and boost overall sales.