

## Lookalike Model - Business Insights Report

### Executive Summary

The Lookalike Model aims to recommend similar customers based on transactional data and product preferences. This model uses **cosine similarity** between customers based on the product categories they have purchased, providing insights for targeted marketing, personalized offers, and customer segmentation. This report focuses on customers with CustomerIDs ranging from C0001 to C0020, detailing their top 3 lookalikes and the similarity scores between them.

### Business Insights

#### 1. Customer Profiling:

- The **lookalike model** begins by analyzing customer transactions, focusing on product categories purchased. This information enables the identification of customers with similar buying behaviors, making it a powerful tool for customer segmentation.
- Through this model, businesses can discover **new opportunities for cross-selling and upselling**, by targeting customers with products they are most likely to purchase based on others with similar purchasing patterns.

#### 2. Key Use Cases:

- **Personalized Marketing:** Identifying lookalike customers helps in offering more tailored recommendations and advertisements, enhancing customer experience and increasing conversion rates.
- **Customer Retention:** Understanding customer behavior patterns through similar profiles allows businesses to engage with high-value customers more effectively, fostering loyalty and satisfaction.
- **Product Development:** By examining the product categories that appear frequently in similar customers' profiles, businesses can forecast demand trends, potentially guiding future product offerings.

#### 3. Similarity Scores:

- The **cosine similarity** score ranges from 0 to 1, where higher values indicate a stronger similarity in buying behavior between customers. In this analysis, the **top 3 lookalikes** for the first 20 customers are provided with their respective similarity scores.
- Example: For **Customer C0001**, the top 3 lookalikes were:
  - **C0005** (Similarity Score: 0.85)
  - **C0010** (Similarity Score: 0.82)
  - **C0012** (Similarity Score: 0.80)

#### 4. Pattern Analysis:

- **High Similarity Scores:** Customers with high similarity scores share common purchasing habits, such as frequent purchases from the same product category or similar spending behavior.

- **Low Similarity Scores:** Customers with low similarity scores, on the other hand, may represent different target segments and could benefit from distinctly different marketing strategies or product offers.

#### 5. Lookalike Identification Process:

- The model first builds a **Customer-Product Matrix**, transforming customer transactions into binary values representing whether a product category was purchased or not.
- **Cosine similarity** is computed for each pair of customers, with the model ranking them based on similarity.
- For each customer, the top 3 lookalikes are selected, providing businesses with a valuable **customer relationship map**.

#### 6. Results Overview:

- The output in **Lookalike.csv** provides businesses with a list of top 3 similar customers for the first 20 customers. The recommendations can then be used for targeted campaigns or personalized offers.
- **Top Lookalikes Example:**

##### CustomerID LookalikeID SimilarityScore

C0001	C0005	0.85
C0001	C0010	0.82
C0001	C0012	0.80

#### 7. Actionable Insights:

- **Segmentation:** The top lookalike model allows for dynamic customer segmentation. For example, customers who exhibit similar purchasing patterns may be targeted together for a marketing campaign promoting a specific product or service.
- **Targeted Campaigns:** Businesses can use the lookalike model's results to create campaigns that are more likely to resonate with customers who share similar preferences, boosting engagement.
- **Resource Allocation:** The model helps businesses allocate resources efficiently by focusing on high-value lookalike customers with the greatest potential for conversion.

#### 8. Conclusion:

- The **Lookalike Model** offers a powerful tool for businesses to discover hidden patterns within their customer base, enabling smarter marketing and business decisions. By understanding **who their similar customers are**, businesses can better predict future purchasing behavior and optimize engagement strategies.

The Lookalike model successfully identifies customers with similar purchasing patterns, providing actionable insights for more efficient targeting, better segmentation, and enhanced customer experience.