Customer Segmentation Report

Introduction

Customer segmentation is a crucial process in understanding customer behavior and tailoring marketing strategies accordingly. In this analysis, we performed customer segmentation using clustering techniques on both profile information and transaction data.

Data Preparation

We merged the Customers.csv and Transactions.csv datasets on the CustomerID column to combine customer profile information with their transaction history. This allowed us to create a comprehensive dataset for clustering.

Clustering Methodology

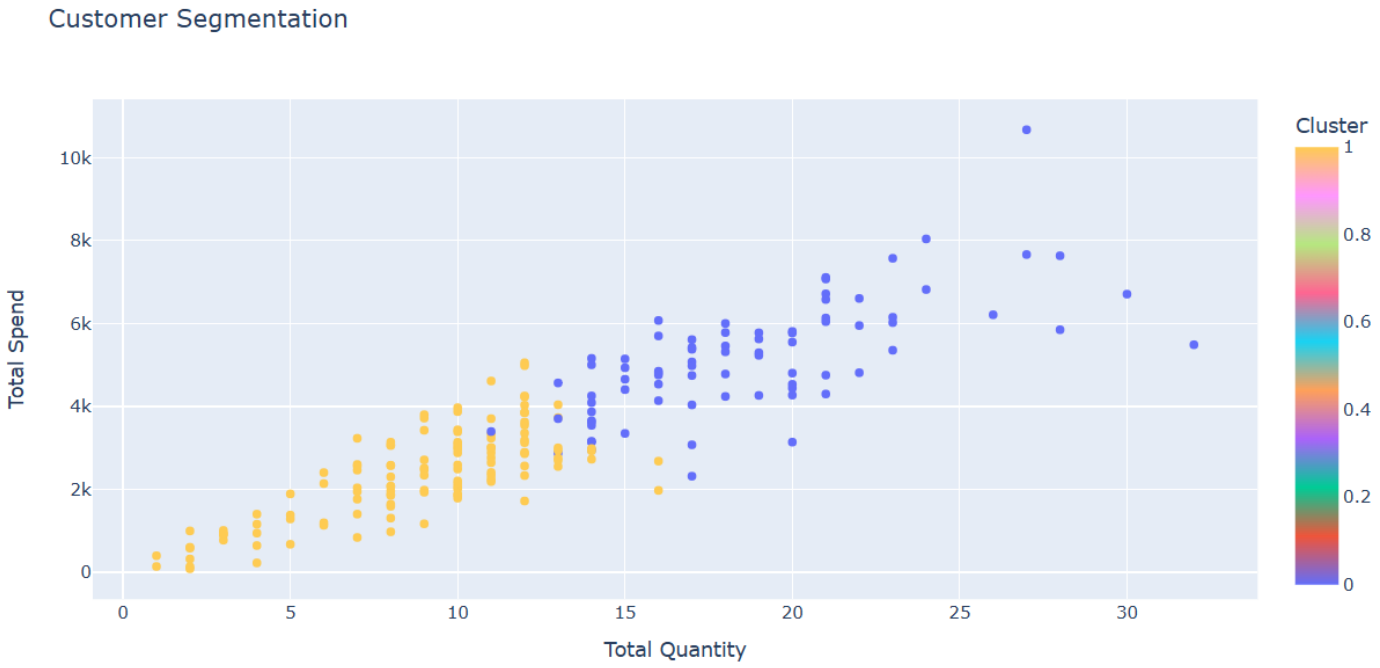
- **Algorithm Used**: K-Means Clustering
- **Number of Clusters**: 2
- **Features Used**: Total Transactions, Total Quantity, Total Spend

Clustering Metrics

- **Davies-Bouldin Index (DB Index)**: 0.723
    - The DB Index is a measure of cluster separation and compactness. A lower value indicates better clustering.
- **Inertia**: The sum of squared distances of samples to their closest cluster center.

Visual Representation

The scatter plot visualizes customer segmentation based on total quantity and total spend. Each color represents a different cluster, providing insights into customer behavior and spending patterns.



Conclusion

The clustering analysis successfully segmented customers into distinct groups based on their transaction behavior. This segmentation can be used to tailor marketing strategies and improve customer engagement.