**Spending Behavior Clustering:**

Objective: Identify customer segments based on their spending habits.

Features to Use: 'Purchase Amount (USD)', 'Previous Purchases', 'Discount Applied', 'Promo Code Used'.

Insights: This can help identify high spenders, bargain hunters, and occasional shoppers. Tailored marketing strategies can be developed for each group, such as exclusive offers for high spenders or targeted discounts for bargain hunters.

**Result :**

Rata-rata Pengeluaran per Pelanggan:

Cluster Spending Behavior

0 60.130454

1 59.279070

Total Pendapatan per Segmen:

Cluster Spending Behavior

0 133670

1 99411

Persentase Penggunaan Promo dan Diskon per Segmen:

Cluster Spending Behavior

0 0.0

1 43.0

Summary Information for Selected Features:

Purchase Amount (USD) Previous Purchases

count 3900.000000 3900.000000

mean 59.764359 25.351538

std 23.685392 14.447125

min 20.000000 1.000000

25% 39.000000 13.000000

50% 60.000000 25.000000

75% 81.000000 38.000000

max 100.000000 50.000000

**Product Preference Clustering:**

Objective: Group customers based on the types of products they purchase.

Features to Use: 'Item Purchased', 'Category', 'Size', 'Color', 'Season'.

Insights: Understanding product preferences can assist in inventory management, personalized marketing, and product development.

**Result :**

Jumlah Penjualan per Kategori Produk:

Category Accessories Clothing Footwear Outerwear

Cluster Spending Behavior

0 697 1006 340 180

1 543 731 259 144

Rata-rata Jumlah Item yang Dibeli per Transaksi:

Cluster Spending Behavior

0 25.056230

1 25.742993

Persentase Pembelian per Musim:

Season Fall Spring Summer Winter

Cluster Spending Behavior

0 26.000900 25.146199 23.931624 24.921278

1 23.673226 26.237329 25.223614 24.865832

Persentase Pembelian per Warna:

Color Beige Black Blue Brown Charcoal \

Cluster Spending Behavior

0 3.553756 4.363473 4.138552 3.958614 3.463788

1 4.054860 4.174120 3.577818 3.160405 4.531902

Color Cyan Gold Gray Green Indigo \

Cluster Spending Behavior

0 4.228520 3.778677 4.273504 4.498426 3.59874

1 4.293381 3.220036 3.816339 4.114490 3.99523

Color ... Peach Pink Purple Red \

Cluster Spending Behavior ...

0 ... 4.183536 4.408457 3.733693 3.643725

1 ... 3.339296 3.279666 4.054860 3.995230

Color Silver Teal Turquoise Violet White \

Cluster Spending Behavior

0 4.318489 4.183536 3.508772 4.228520 3.193882

1 4.591532 4.710793 3.995230 4.293381 4.233751

Color Yellow

Cluster Spending Behavior

0 4.408457

1 4.531902

**Loyalty and Engagement Clustering:**

Objective: Segment customers based on their loyalty and engagement with the brand.

Features to Use: 'Frequency of Purchases', 'Review Rating', 'Subscription Status', 'Previous Purchases'.

Insights: Identify loyal customers who can be targeted for loyalty programs and new customers who might need engagement strategies to increase their loyalty.

**Result :**

Average Review Rating: 3.749948717948712

Average Estimated Purchase Frequency: 17.471282051282053

Customer Retention Rate based on Subscription Status:

No 73.0

Yes 27.0

Percentage of Customers by Purchase Frequency:

Every 3 Months 14.974359

Annually 14.666667

Quarterly 14.435897

Monthly 14.179487

Bi-Weekly 14.025641

Fortnightly 13.897436

Weekly 13.820513

**Demographic Clustering:**

Objective: Understand customer segments based on demographic data.

Features to Use: 'Age', 'Gender', 'Location'.

Insights: Tailor marketing campaigns and product offerings to suit the needs and preferences of different demographic groups.

**Result :**

Distribusi Pelanggan per Demografi: Persentase pelanggan dalam setiap kategori demografi (umur, gender, lokasi).

Rata-rata Pengeluaran per Demografi: Pengeluaran rata-rata pelanggan berdasarkan demografi.

Tingkat Respons terhadap Kampanye per Demografi: Efektivitas kampanye pemasaran berdasarkan demografi.

**Payment Method and Shipping Preference Clustering:**

Objective: Segment customers based on their payment and shipping preferences. This can help in optimizing payment and shipping options to enhance customer satisfaction.

Features to Use: 'Payment Method', 'Shipping Type'.

Insights: This can help in optimizing payment and shipping options to enhance customer satisfaction.

**Result :**

Persentase Pembayaran per Metode:

PayPal 17.358974

Credit Card 17.205128

Cash 17.179487

Debit Card 16.307692

Venmo 16.256410

Bank Transfer 15.692308

Shipping Type

2-Day Shipping 60.733652

Express 60.475232

Free Shipping 60.410370

Next Day Air 58.631173

Standard 58.460245

Store Pickup 59.893846

Payment Method

Bank Transfer 102.000000

Cash 111.666667

Credit Card 111.833333

Debit Card 106.000000

PayPal 112.833333

Venmo 105.666667