

CUSTOMERS SEGMENTATION

FOR TARGETED MARKETING



Business - KPI Dashboard

Total Customers

3,900

Total Sales (Current)

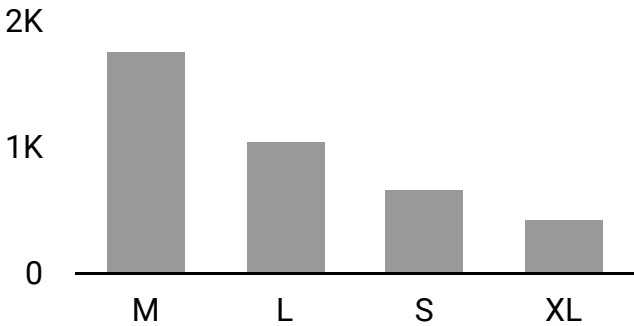
\$233K

↑
136%

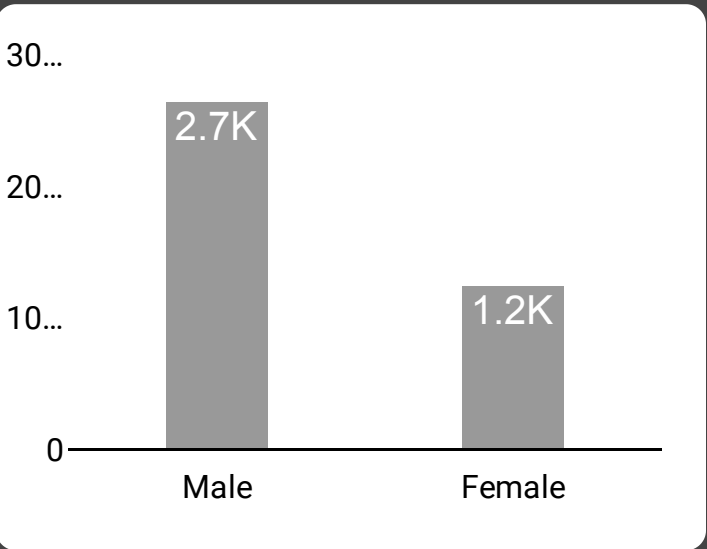
Total Sales (Previous)

\$99K

Customers Most Preferred Sizes



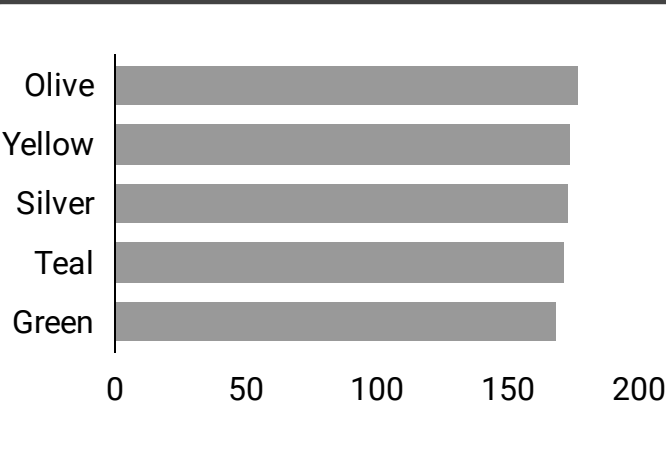
Customers by Gender



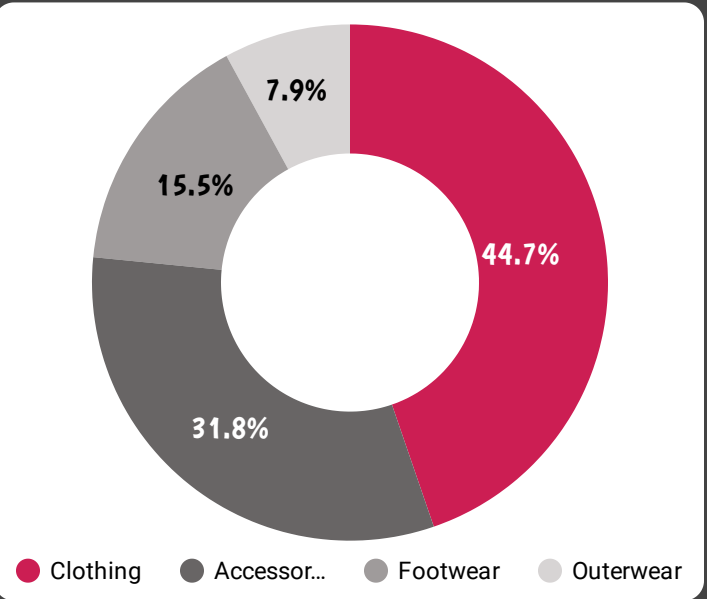
Top Sold Items

	Item Purchased	Quantity
1.	Jewelry	171
2.	Pants	171
3.	Blouse	171
4.	Shirt	169
5.	Dress	166
6.	Sweater	164
7.	Jacket	163

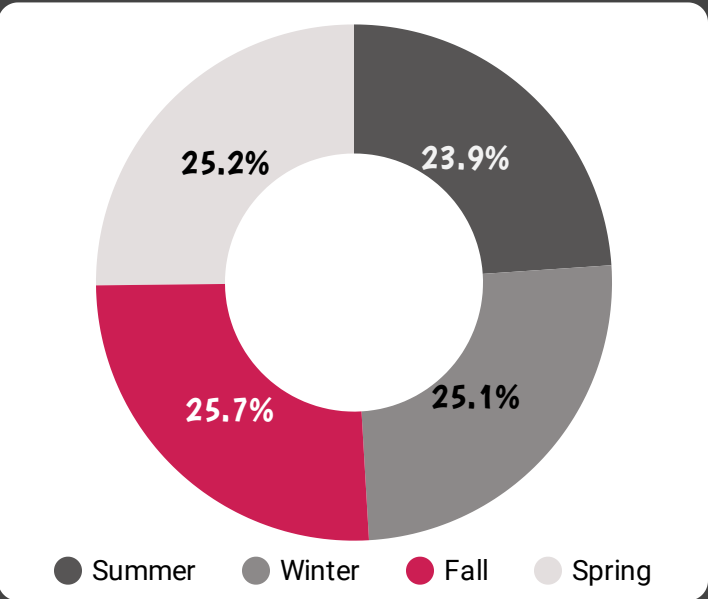
Customers Most Preferred Colors



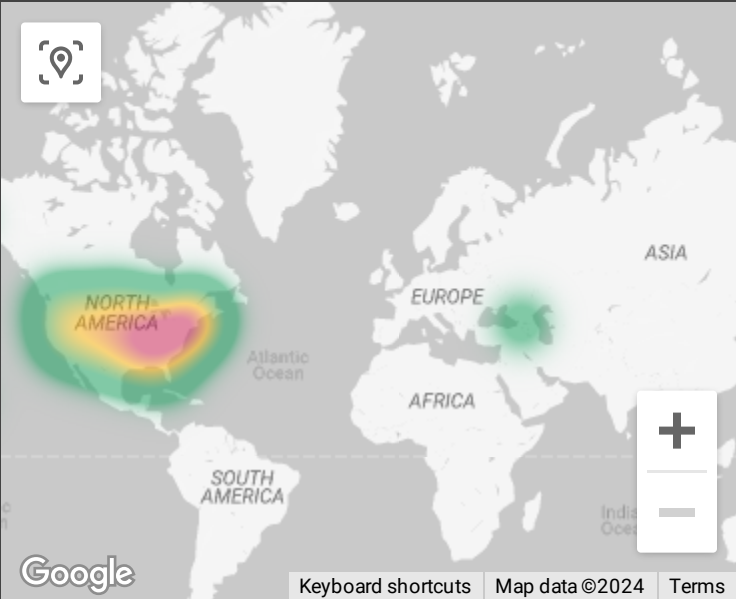
Sales in each category



Sales in each Season

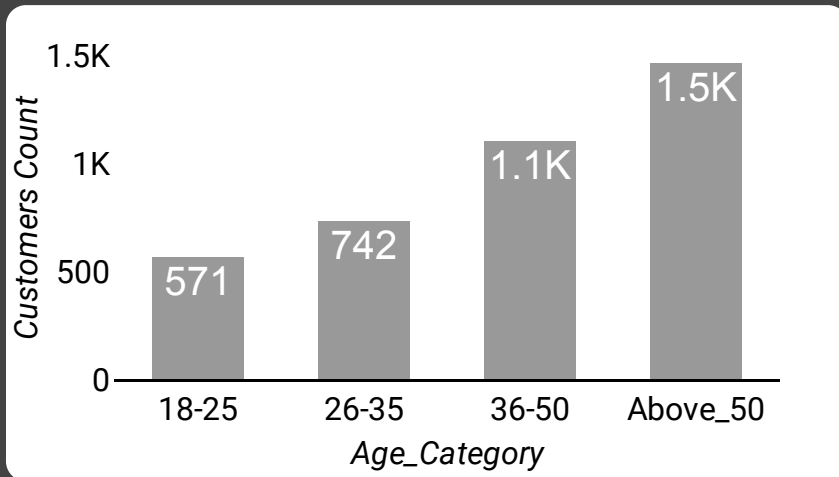


Total Sales by Country



Demographic Segmentation

1. Age Segmentation



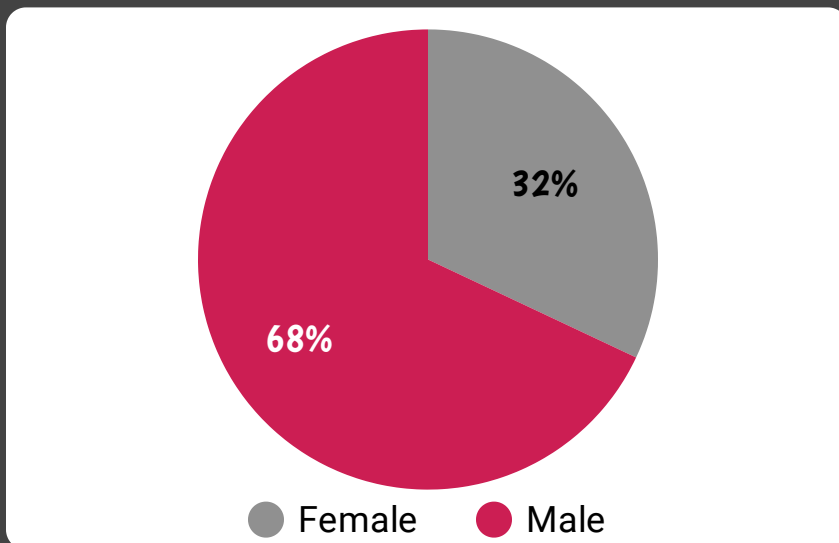
Segments:

- 18-25:** Young adults, likely to be students or early-career professionals.
- 26-35:** Mid-career professionals, possibly starting families.
- 36-50:** Established in careers, likely with families, higher disposable income.
- Above_50:** Retirees, potentially with specific lifestyle needs.

Marketing Uses:

- 18-25:** Promoting trendy, affordable products, student discounts
- 26-35:** Focusing on quality, convenience, family-oriented products, and services.
- 36-50:** Highlighting the premium products and loyalty programs.
- Above_50:** Offering health-related products, leisure activities, and senior discounts.

2. Gender Segmentation

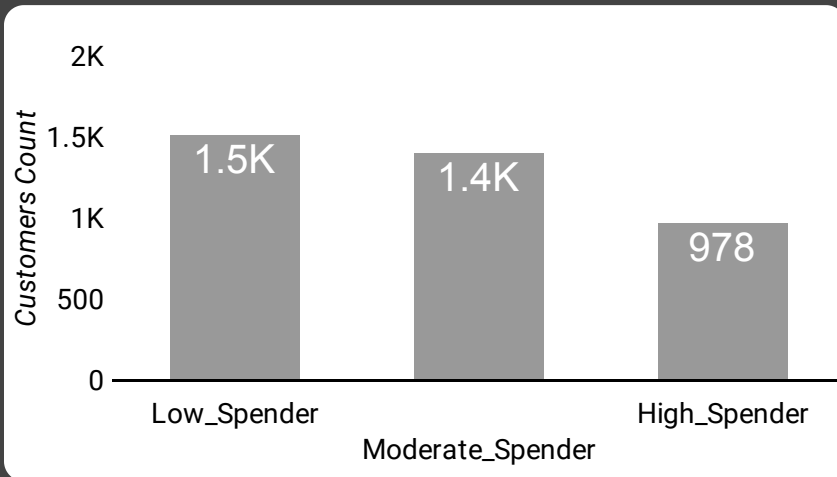


Marketing Uses:

- Male:** Focusing on electronics sports equipment, men's fashion, and grooming products.
- Female:** Emphasizing fashion, beauty products, wellness, and family-related items.
- Unisex Campaigns:** Gender-neutral products can be marketed with inclusive messaging to appeal to all genders.

Behavioral Segmentation

1. Purchase Behavior Segmentation

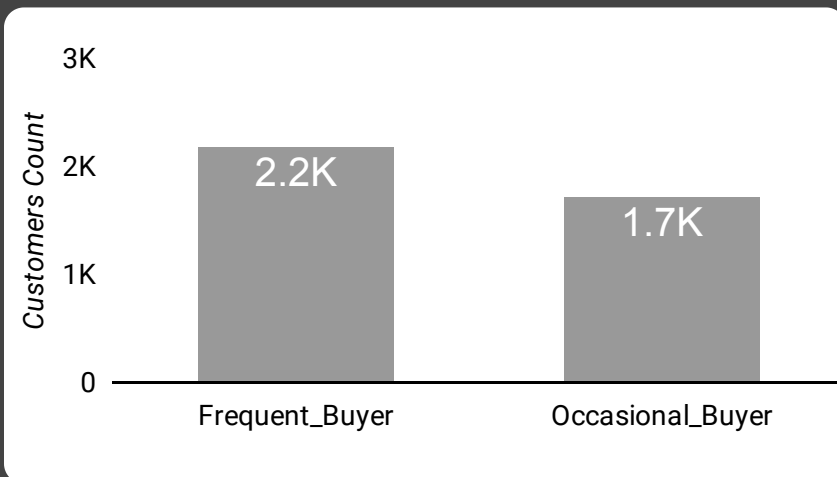


Marketing Uses:

High & Moderate : Offering exclusive, premium products, early access to new products, and personalized services.

Low : Providing value deals, discounts, and affordable product bundles to encourage more spending.

2. Frequency of Purchases



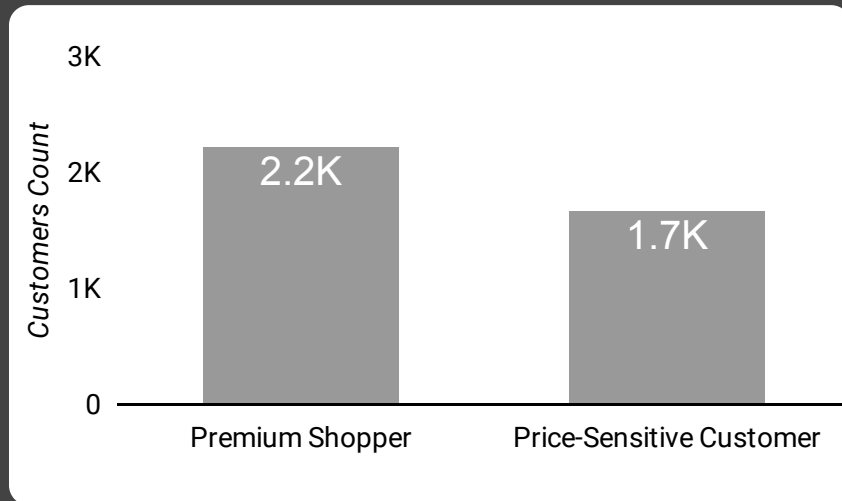
Marketing Uses:

Frequent Buyers: Rewarding loyalty with points systems, special offers, and early notifications for sales.

Occasional Buyers: Sending reminders, special discounts, or incentives to encourage repeat purchases.

Psychographic Segmentation

1. Price Sensitivity Segmentation



Segments:

Price-Sensitive Customers: Customers who frequently use discounts or promo codes.

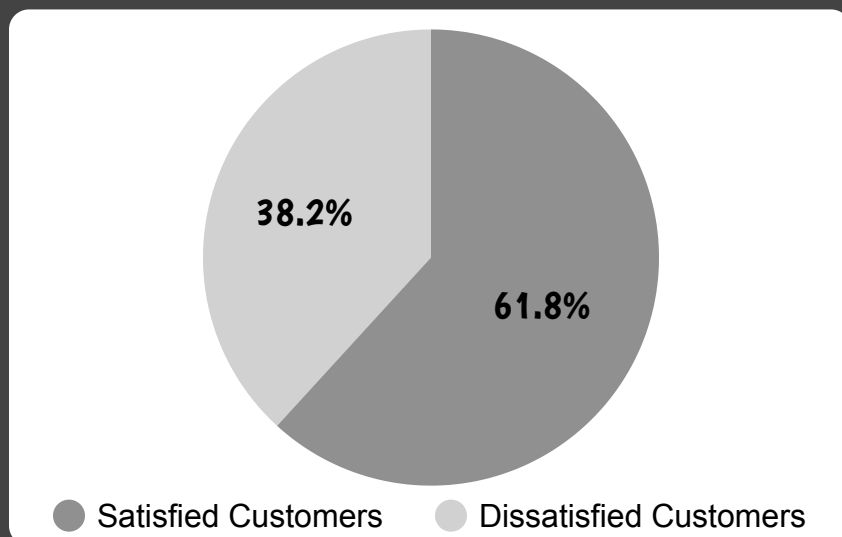
Premium Shoppers: Customers who rarely use discounts and prefer premium products.

Marketing Uses:

Price-Sensitive: Sending discount offers, flash sales, and budget-friendly product recommendations.

Premium: Promoting high-end products, exclusive memberships.

2. Customer Satisfaction Segmentation



Segments:

Satisfied Customers: Customers with high review ratings.

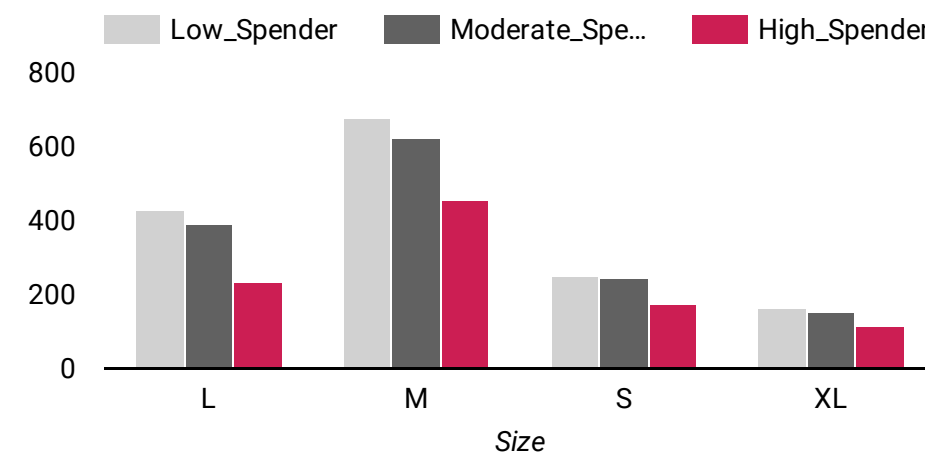
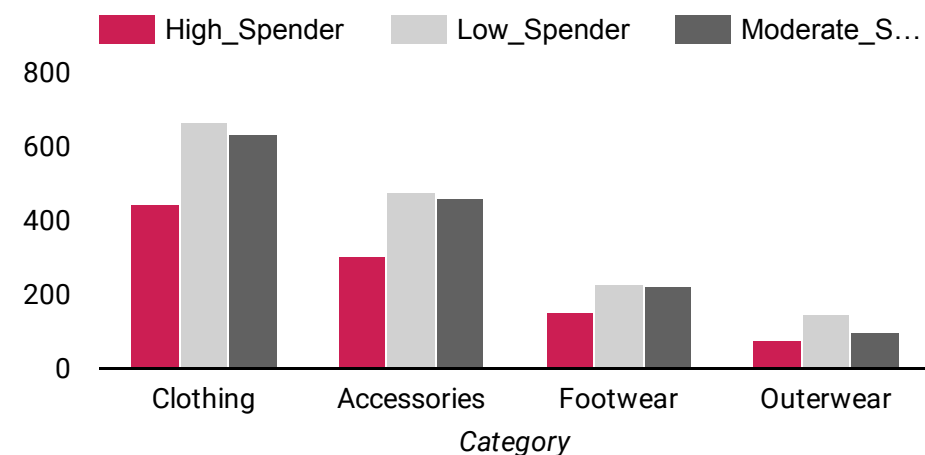
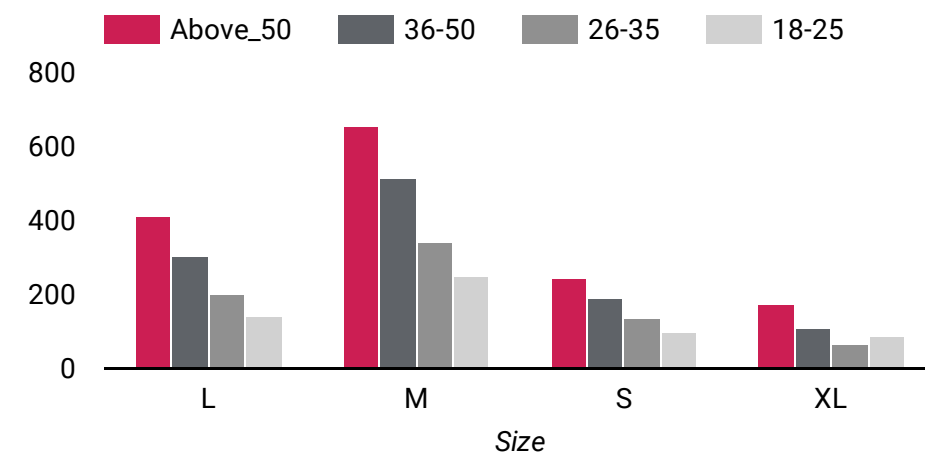
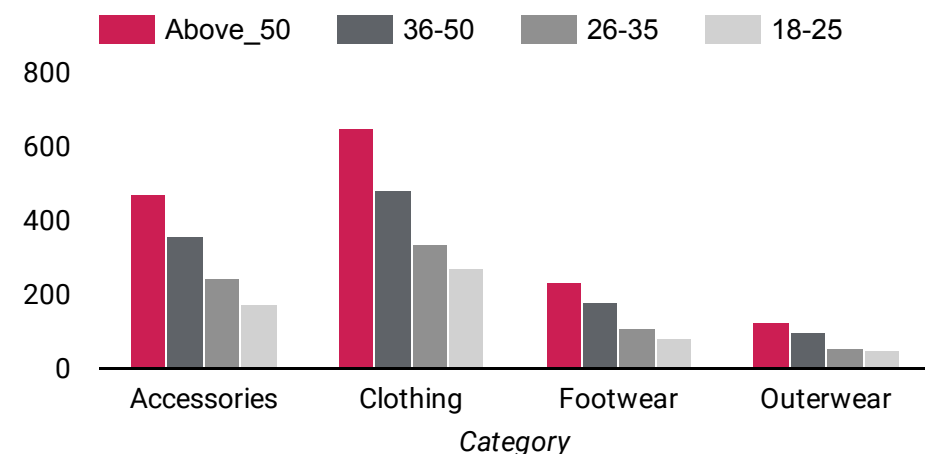
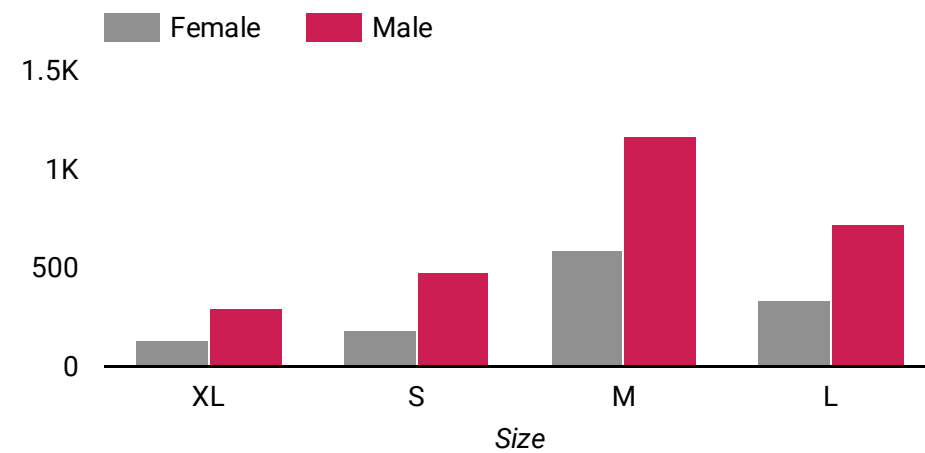
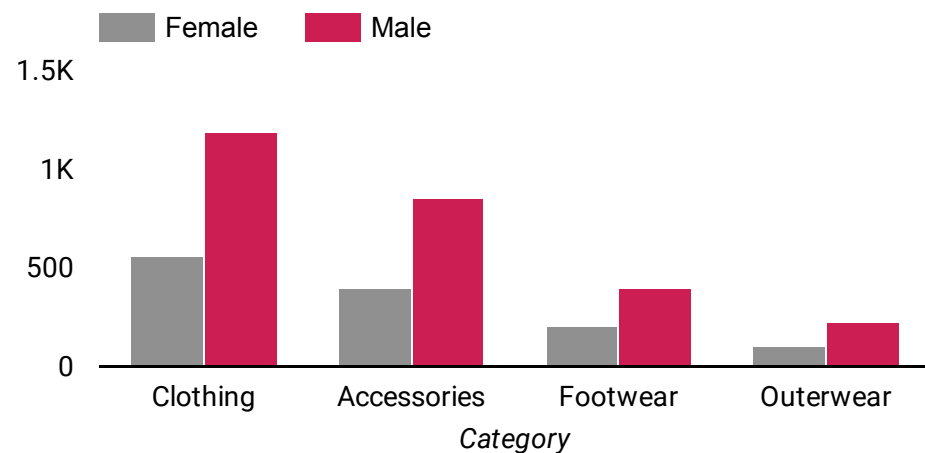
Dissatisfied Customers: Customers with low review ratings.

Marketing Uses:

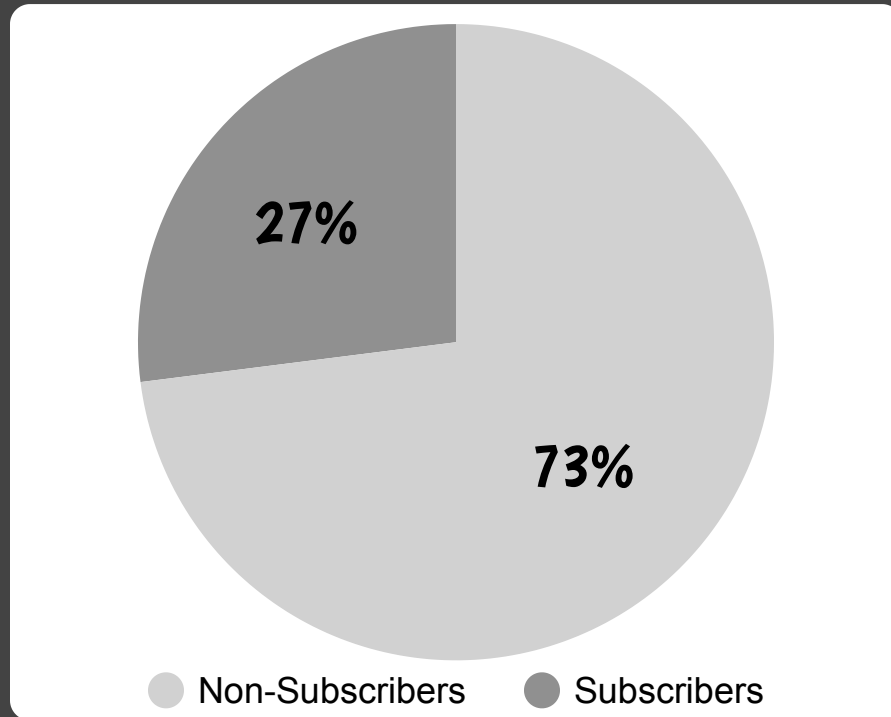
Satisfied Customers: Encouraging repeat purchases with loyalty rewards and referral programs.

Dissatisfied Customers: Offering personalized solutions, discounts, and getting feedbacks to improve satisfaction.

Product & Size Preference Segmentation



Subscription-Based Segmentation



Marketing Uses:

Subscribers: Providing exclusive content, and special renewal offers.

Non-Subscribers: Encouraging sign-ups with free trials, discounts on the first purchase after their subscription and other value added services.

Conclusion:

By applying these segmentation strategies, we can design highly personalized marketing campaigns that resonate with specific customer groups. This tailored approach will likely lead to better engagement, higher conversion rates, and ultimately, significant business growth.

Import the needed libraries

```
In [1]: import pandas as pd
import numpy as np
```

Reading Our Dataset

```
In [2]: df = pd.read_excel(r"C:\Users\Vijay J\Documents\Project_Work\Dataset\Users_Shopping_Data.xlsx")
```

```
In [3]: df.head()
```

Out[3]:

	Customer ID	Age	Gender	Item Purchased	Category	Purchase Amount (USD)	Location	Size	Color	Season	Review Rating	Subscription Status	Shipping Type	Discount Applied	Promo Code Used	Previous Purchase
0	1	55	Male	Blouse	Clothing	53	Kentucky	L	Gray	Winter	3.1	Yes	Express	Yes	Yes	
1	2	19	Male	Sweater	Clothing	64	Maine	L	Maroon	Winter	3.1	Yes	Express	Yes	Yes	
2	3	50	Male	Jeans	Clothing	73	Massachusetts	S	Maroon	Spring	3.1	Yes	Free Shipping	Yes	Yes	
3	4	21	Male	Sandals	Footwear	90	Rhode Island	M	Maroon	Spring	3.5	Yes	Next Day Air	Yes	Yes	
4	5	45	Male	Blouse	Clothing	49	Oregon	M	Turquoise	Spring	2.7	Yes	Free Shipping	Yes	Yes	

EDA - Exploratory Data Analysis

In [4]: `df.info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 3900 entries, 0 to 3899
Data columns (total 18 columns):
 #   Column                                Non-Null Count  Dtype
---  -
 0   Customer ID                          3900 non-null   int64
 1   Age                                   3900 non-null   int64
 2   Gender                               3900 non-null   object
 3   Item Purchased                       3900 non-null   object
 4   Category                             3900 non-null   object
 5   Purchase Amount (USD)                3900 non-null   int64
 6   Location                             3900 non-null   object
 7   Size                                 3900 non-null   object
 8   Color                                3900 non-null   object
 9   Season                               3900 non-null   object
10   Review Rating                        3900 non-null   float64
11   Subscription Status                  3900 non-null   object
12   Shipping Type                       3900 non-null   object
13   Discount Applied                    3900 non-null   object
14   Promo Code Used                     3900 non-null   object
15   Previous Purchases                  3900 non-null   int64
16   Payment Method                      3900 non-null   object
17   Frequency of Purchases               3900 non-null   object
dtypes: float64(1), int64(4), object(13)
memory usage: 548.6+ KB
```

Here we can make sure that, our dataset doesn't have any null, because all Non-null counts are same for all

Despite, Let's check, if there is any null values further.

```
In [6]: df.isnull().sum()
```

```
Out[6]: Customer ID      0
Age      0
Gender    0
Item Purchased  0
Category  0
Purchase Amount (USD)  0
Location  0
Size      0
Color     0
Season    0
Review Rating  0
Subscription Status  0
Shipping Type  0
Discount Applied  0
Promo Code Used  0
Previous Purchases  0
Payment Method  0
Frequency of Purchases  0
dtype: int64
```

So, No more null values.....

1. Age Segmentation (Demographic Segmentation)

```
In [13]: def age_segmt(age):  
        if age >= 18 and age <= 25:  
            return '18-25'  
        elif age > 25 and age <=35:  
            return '26-35'  
        elif age > 35 and age <= 50:  
            return '36-50'  
        else:  
            return 'Above_50'  
df['Age_Category'] = df['Age'].apply(age_segmt)  
df.head()
```

Out[13]:

Category	Purchase Amount (USD)	Location	Size	Color	Season	Review Rating	Subscription Status	Shipping Type	Discount Applied	Promo Code Used	Previous Purchases	Payment Method	Frequency of Purchases	Age_Category
Clothing	53	Kentucky	L	Gray	Winter	3.1	Yes	Express	Yes	Yes	14	Venmo	Fortnightly	Above_50
Clothing	64	Maine	L	Maroon	Winter	3.1	Yes	Express	Yes	Yes	2	Cash	Fortnightly	18-25
Clothing	73	Massachusetts	S	Maroon	Spring	3.1	Yes	Free Shipping	Yes	Yes	23	Credit Card	Weekly	36-50
Footwear	90	Rhode Island	M	Maroon	Spring	3.5	Yes	Next Day Air	Yes	Yes	49	PayPal	Weekly	18-25
Clothing	49	Oregon	M	Turquoise	Spring	2.7	Yes	Free Shipping	Yes	Yes	31	PayPal	Annually	36-50

2. Purchase Behavior Segmentation

```
In [14]: def categorize_spenders(pur_amt):  
    if pur_amt <= 50:  
        return 'Low_Spender'  
    elif pur_amt <= 80:  
        return 'Moderate_Spender'  
    else:  
        return 'High_Spender'  
  
df['Spender Category'] = df['Purchase Amount (USD)'].apply(categorize_spenders)  
df.head()
```

Out[14]:

se nt D)	Location	Size	Color	Season	Review Rating	Subscription Status	Shipping Type	Discount Applied	Promo Code Used	Previous Purchases	Payment Method	Frequency of Purchases	Age_Category	Spender Category
53	Kentucky	L	Gray	Winter	3.1	Yes	Express	Yes	Yes	14	Venmo	Fortnightly	Above_50	Moderate_Spender
34	Maine	L	Maroon	Winter	3.1	Yes	Express	Yes	Yes	2	Cash	Fortnightly	18-25	Moderate_Spender
73	Massachusetts	S	Maroon	Spring	3.1	Yes	Free Shipping	Yes	Yes	23	Credit Card	Weekly	36-50	Moderate_Spender
30	Rhode Island	M	Maroon	Spring	3.5	Yes	Next Day Air	Yes	Yes	49	PayPal	Weekly	18-25	High_Spender
49	Oregon	M	Turquoise	Spring	2.7	Yes	Free Shipping	Yes	Yes	31	PayPal	Annually	36-50	Low_Spender

3. Frequency of Purchases

```
In [8]: for i in df['Frequency of Purchases'].unique():  
        print(i)
```

```
Fortnightly  
Weekly  
Annually  
Quarterly  
Bi-Weekly  
Monthly  
Every 3 Months
```

```
In [15]: frequent = ['Fortnightly', 'Weekly', 'Bi-Weekly', 'Monthly']  
occasion = ['Annually', 'Every 3 Months', 'Quarterly']  
def frequency(x):  
    if x in frequent:  
        return 'Frequent_Buyer'  
    elif x in occasion:  
        return 'Occasional_Buyer'  
df['Purchase Frequency'] = df['Frequency of Purchases'].apply(frequency)  
df.head()
```

```
Out[15]:
```

ation	Size	Color	Season	...	Subscription Status	Shipping Type	Discount Applied	Promo Code Used	Previous Purchases	Payment Method	Frequency of Purchases	Age_Category	Spender Category	Purchase Frequency
ucky	L	Gray	Winter	...	Yes	Express	Yes	Yes	14	Venmo	Fortnightly	Above_50	Moderate_Spender	Frequent_Buyer
laine	L	Maroon	Winter	...	Yes	Express	Yes	Yes	2	Cash	Fortnightly	18-25	Moderate_Spender	Frequent_Buyer
setts	S	Maroon	Spring	...	Yes	Free Shipping	Yes	Yes	23	Credit Card	Weekly	36-50	Moderate_Spender	Frequent_Buyer
sland	M	Maroon	Spring	...	Yes	Next Day Air	Yes	Yes	49	PayPal	Weekly	18-25	High_Spender	Frequent_Buyer

4. Psychographic Segmentation

```
In [20]: df['Price_Sensitivity_Segmentation'] = df.apply(  
    lambda row: 'Price-Sensitive Customer' if row['Discount Applied'] == 'Yes' and row['Promo Code Used'] == 'Yes'  
    else 'Premium Shopper',  
    axis=1  
)  
df.head()
```

```
Out[20]:
```

Color	Season	...	Shipping Type	Discount Applied	Promo Code Used	Previous Purchases	Payment Method	Frequency of Purchases	Age_Category	Spender Category	Purchase Frequency	Price_Sensitivity_Segmentation
Gray	Winter	...	Express	Yes	Yes	14	Venmo	Fortnightly	Above_50	Moderate_Spender	Frequent_Buyer	Price-Sensitive Customer
Don	Winter	...	Express	Yes	Yes	2	Cash	Fortnightly	18-25	Moderate_Spender	Frequent_Buyer	Price-Sensitive Customer
Don	Spring	...	Free Shipping	Yes	Yes	23	Credit Card	Weekly	36-50	Moderate_Spender	Frequent_Buyer	Price-Sensitive Customer
Don	Spring	...	Next Day Air	Yes	Yes	49	PayPal	Weekly	18-25	High_Spender	Frequent_Buyer	Price-Sensitive Customer
White	Spring	...	Free Shipping	Yes	Yes	31	PayPal	Annually	36-50	Low_Spender	Occasional_Buyer	Price-Sensitive Customer

5. Customer Satisfaction Segmentation

```
In [21]: def satisf(rate):  
        if rate >= 3.5:  
            return 'Satisfied Customers'  
        else:  
            return 'Dissatisfied Customers'  
df['Customer_Satisfaction'] = df['Review Rating'].apply(satisf)  
df.head()
```

Out[21]:

...	Discount Applied	Promo Code Used	Previous Purchases	Payment Method	Frequency of Purchases	Age_Category	Spender Category	Purchase Frequency	Price_Sensitivity_Segmentation	Customer_Satisfaction
...	Yes	Yes	14	Venmo	Fortnightly	Above_50	Moderate_Spender	Frequent_Buyer	Price-Sensitive Customer	Dissatisfied Customers
...	Yes	Yes	2	Cash	Fortnightly	18-25	Moderate_Spender	Frequent_Buyer	Price-Sensitive Customer	Dissatisfied Customers
...	Yes	Yes	23	Credit Card	Weekly	36-50	Moderate_Spender	Frequent_Buyer	Price-Sensitive Customer	Dissatisfied Customers
...	Yes	Yes	49	PayPal	Weekly	18-25	High_Spender	Frequent_Buyer	Price-Sensitive Customer	Satisfied Customers
...	Yes	Yes	31	PayPal	Annually	36-50	Low_Spender	Occasional_Buyer	Price-Sensitive Customer	Dissatisfied Customers

6. Subscription Status Segmentation

```
In [25]: df['Subscription Status'] = df['Subscription Status'].replace({'Yes': 'Subscribers', 'No': 'Non-Subscribers'})
df.head()
```

```
Out[25]:
```

...	Discount Applied	Promo Code Used	Previous Purchases	Payment Method	Frequency of Purchases	Age_Category	Spender Category	Purchase Frequency	Price_Sensitivity_Segmentation	Customer_Satisfaction
...	Yes	Yes	14	Venmo	Fortnightly	Above_50	Moderate_Spender	Frequent_Buyer	Price-Sensitive Customer	Dissatisfied Customers
...	Yes	Yes	2	Cash	Fortnightly	18-25	Moderate_Spender	Frequent_Buyer	Price-Sensitive Customer	Dissatisfied Customers
...	Yes	Yes	23	Credit Card	Weekly	36-50	Moderate_Spender	Frequent_Buyer	Price-Sensitive Customer	Dissatisfied Customers
...	Yes	Yes	49	PayPal	Weekly	18-25	High_Spender	Frequent_Buyer	Price-Sensitive Customer	Satisfied Customers
...	Yes	Yes	31	PayPal	Annually	36-50	Low_Spender	Occasional_Buyer	Price-Sensitive Customer	Dissatisfied Customers

Let's download the final updated data set..

```
In [26]: df.to_csv(r"C:\Users\Vijay J\Documents\Project_Work\Dataset\Users_Shopping_Data_Updated.csv",index = False)
```