

The Shopping Trend

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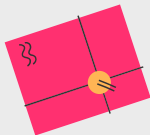
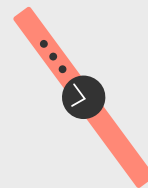


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01

Business Background





Business Background



The shopping trend data includes various attributes related to customer purchases, providing valuable insights for businesses. This data is crucial for understanding customer behavior, preferences, and trends in the market. The business can may be leverage this information to optimize its operations, marketing strategies, or overall customer experience.

The Objectives:

Customer Segmentation: Analyze the data to identify different customer segments based on demographics (age) and purchase behavior. Understanding these segments can help in targeted marketing and personalized offerings.

02

Data PreProcessing



Dataset Information



The Data Consist of **3900 rows** and **18 columns**

Where has no missing value and duplicates value in the database

The dataset features include:

- 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 Purchases
 - Payment Method
 - Frequency of Purchases
-



Missing Values and Duplicate Value

Checking Null Values

```
1 df.isnull().sum()
```

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	

Checking Duplicate Values

```
[ ] 1 df.duplicated().sum()
```

0



03

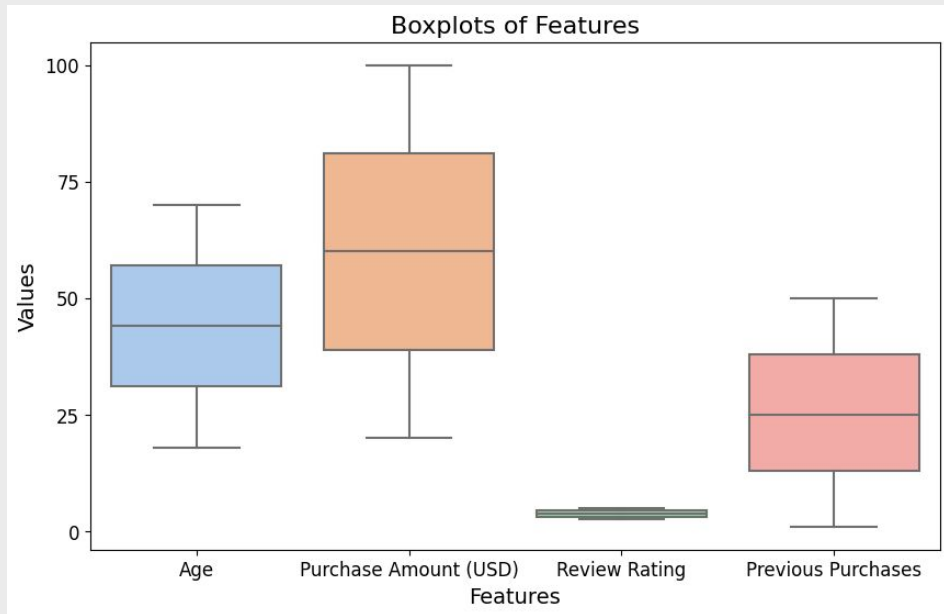
Exploratory Data Analysis (EDA)



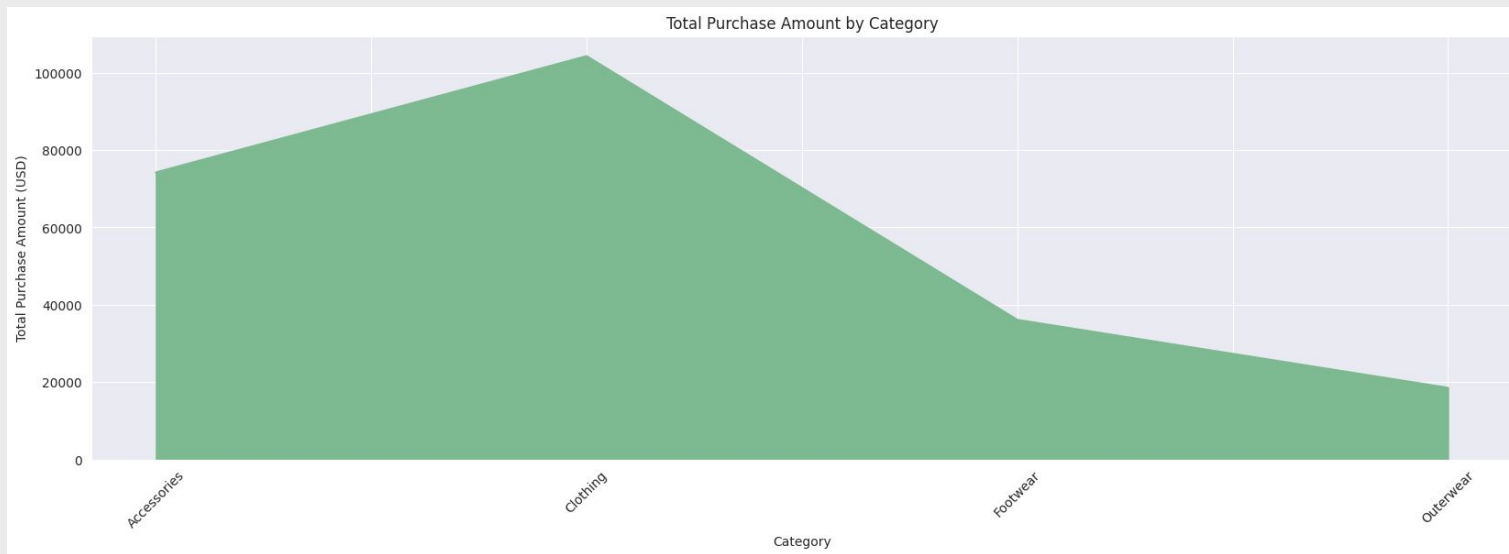
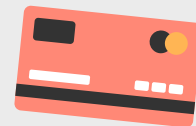


Outliers Detection

There is no outlier between feature



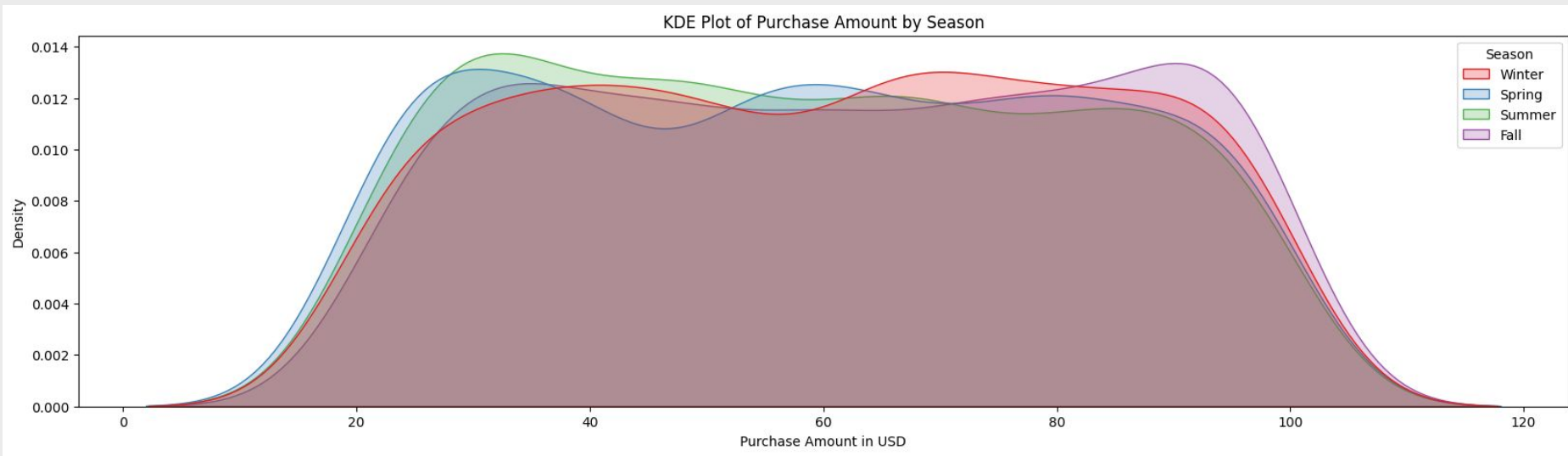
Total Purchase Amount by Category



The Total Purchase Amount the highest
is from clothing

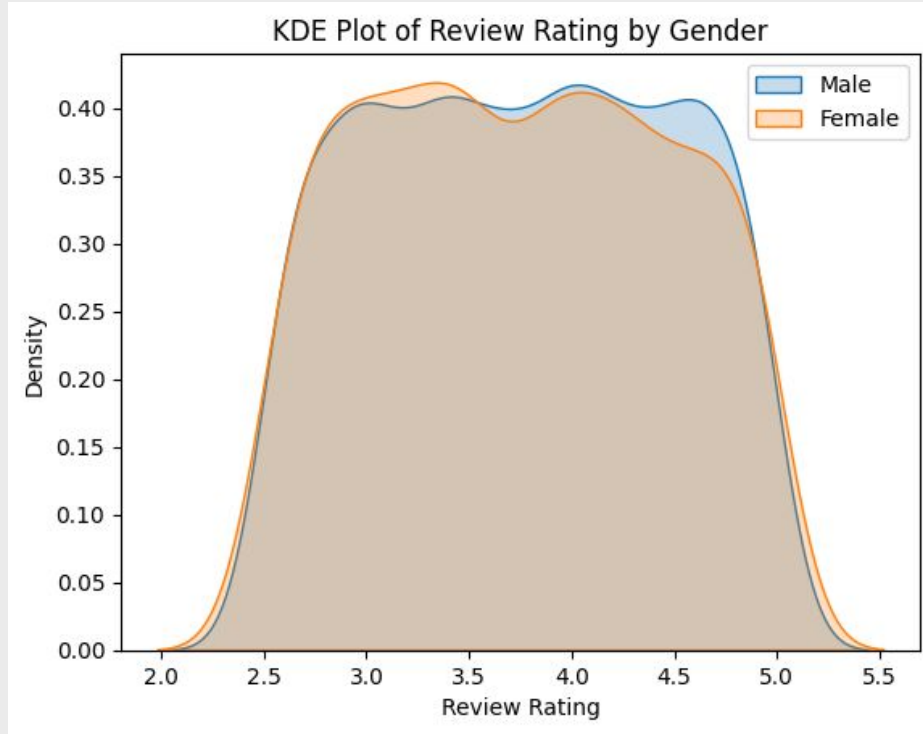


Purchase Amount by Season



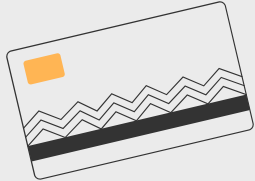
The every season is very fluctuate but
still consistent in every season

Review Rating by Gender

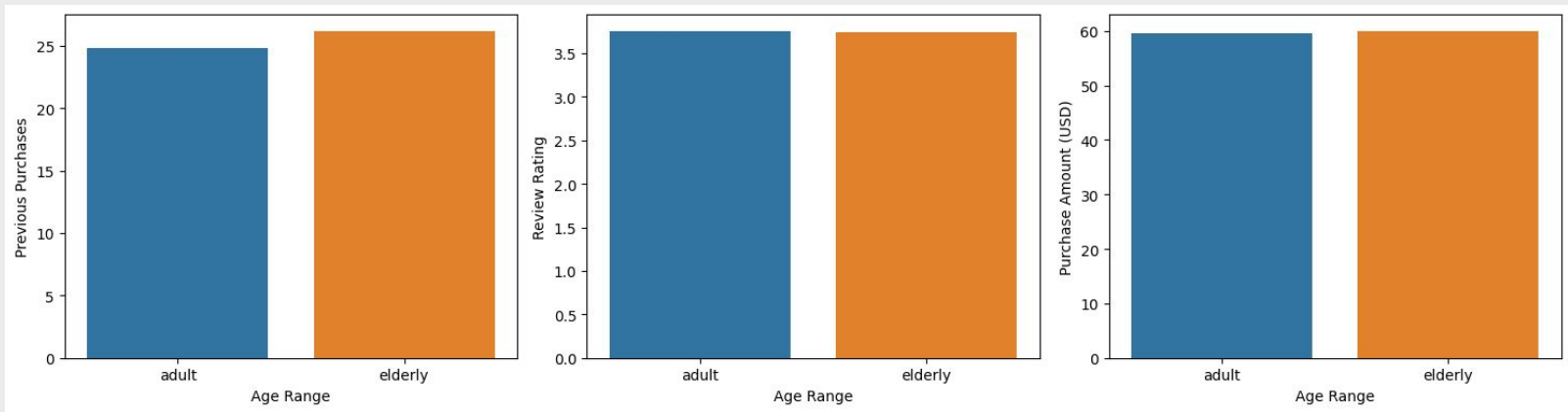


The rating that have been given the female likes to give a low rating but the male consistent



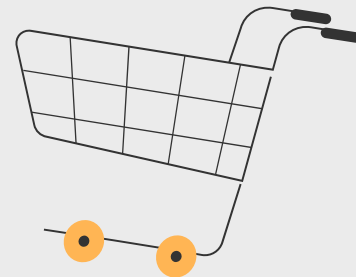


Categorized Age with the Features



It was observed that individuals categorized as `elderly`, those aged over 50, spend more than the adult, although the difference is not significant.

The Multivariate



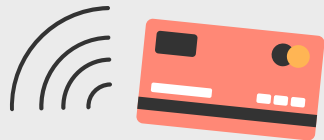
The correlation between feature is very low and it doesn't seem to be the distribution where regression would benefit.



04

Unsupervised Machine Learning





K-means Clustering

For the K-means Clustering we are trying to use two (2) clustering, they are:

1. Purchasing Behavior by Category
2. Customer Clustering by Age and Purchase Amount (USD)

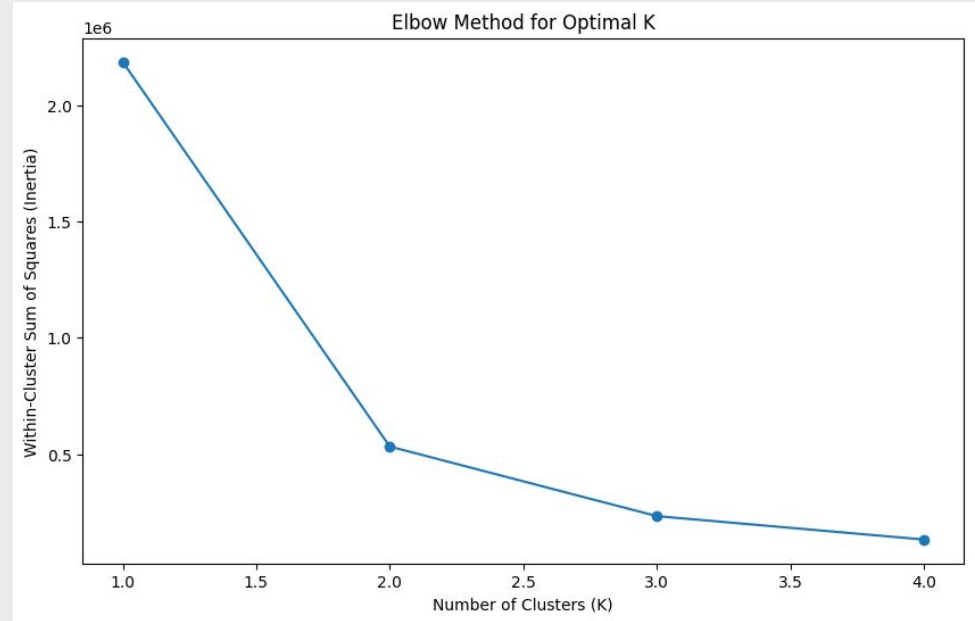




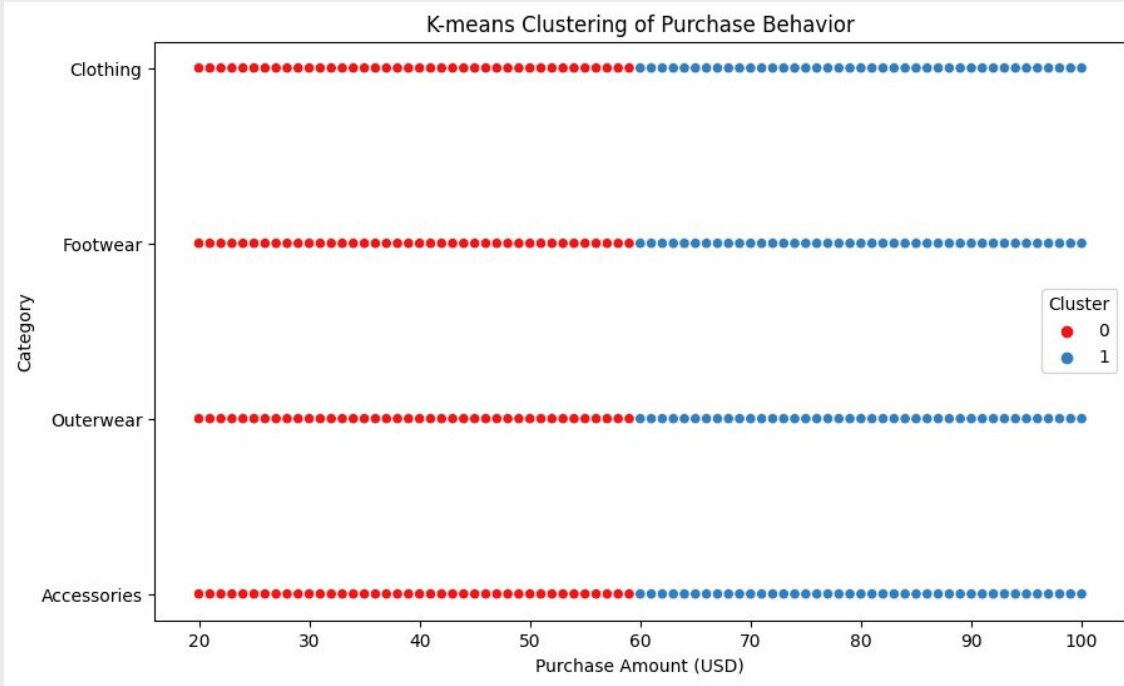
Elbow Method

First using the Elbow Method to know the cluster.

The ideal cluster is **2**.



Purchasing Behavior by Category



The result of the behavior is balance between below and above 60.

So, the purchase of each of the category is the same.

Customer Clustering by Age and Purchase Amount (USD)

The result between age and purchase amount is the same it means in every age from the youngest to the oldest the spending is the same.



05

Conclusion & Business Recommendation



The Conclusion

1. Based on the clustering analysis of age and purchase amount (USD), it was observed that individuals under 60 years old typically do not purchase expensive items exceeding 60 USD. However, those aged 60 and above tend to buy expensive items, possibly due to higher income compared to the younger demographic.
2. But their purchasing behavior remains consistent, as they continue to buy across all categories.





The Business Recommendation

1. Every product category has the potential to attract customers. Therefore, businesses should consider selling all categories of products as there will always be customers interested in buying.
2. Customers of all age groups, ranging from the youngest to the oldest, tend to spend their money on different types of products, ranging from the cheapest to the most expensive. Therefore, businesses with every price range will be bought by customers.
3. Overall, Developing a one-stop-shop experience business for the customer may prefer a solution with a wide range of products and Having products at various price points can contribute to consistent revenue streams, as customers with different budgets can find suitable options.



Thank You

