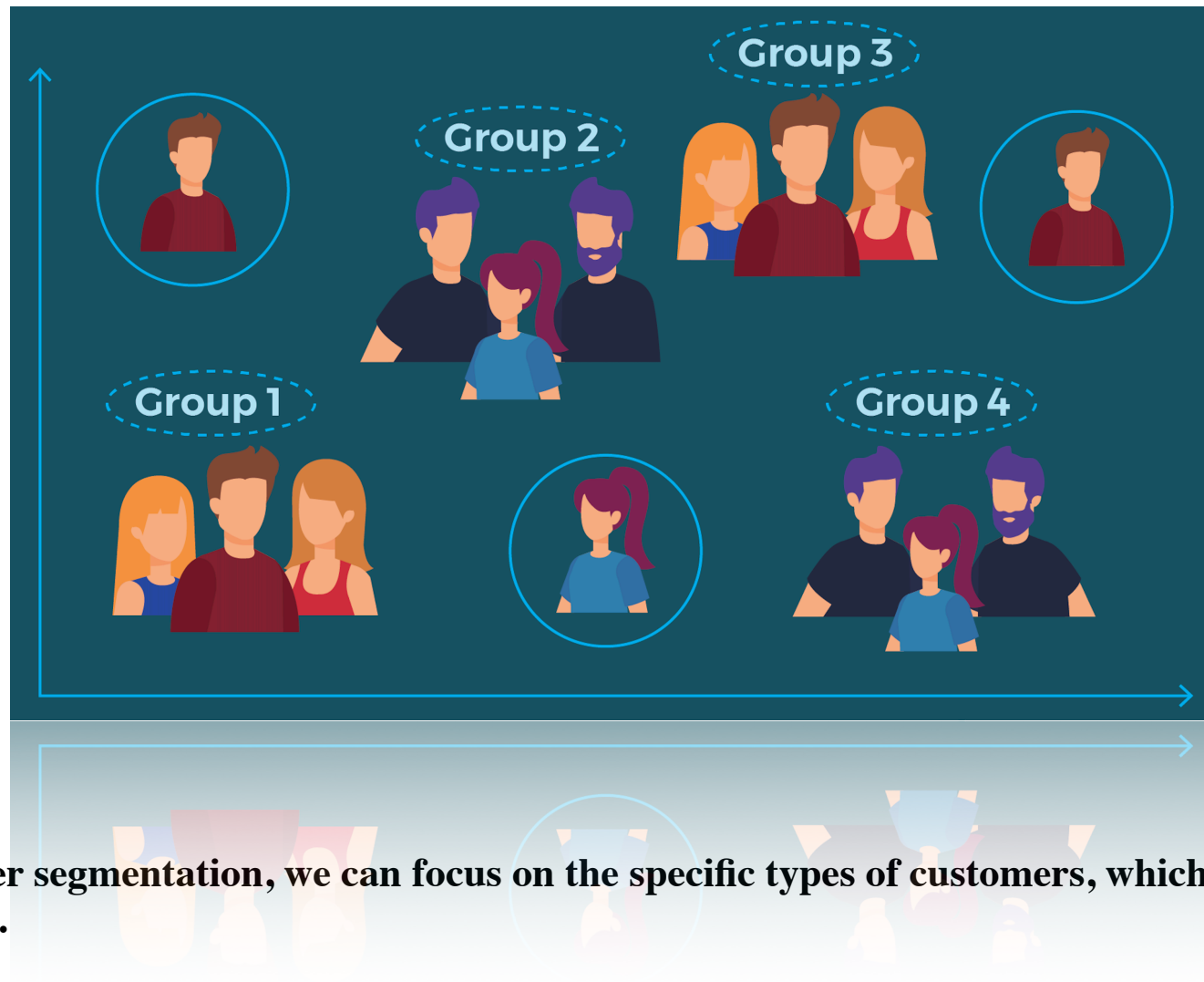


CUSTOMER SEGMENTATION

Customer segmentation is the process of dividing the individual into groups based on their similarities.



By doing customer segmentation, we can focus on the specific types of customers, which leads to increase the sales.

Objective: Analyze the customer dataset using unsupervised learning techniques to identify customer segments and provide recommendations for targeted marketing strategies.

Here is the Data.

Data description

- CustomerID: Unique ID assigned to the customer
- Gender: Gender of the customer
- Age: Age of the customer
- Annual Income (k\$): Annual Income of the customer
- Spending Score (1-100): Score assigned by the mall based on customer behavior and spending nature

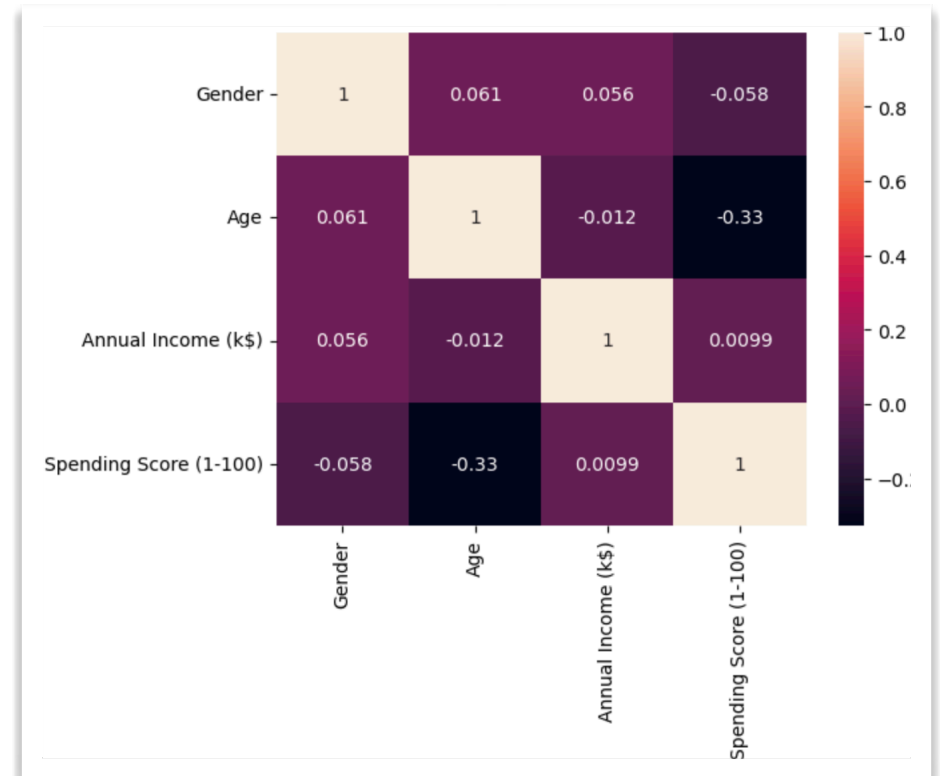
	CustomerID	Gender	Age	Annual Income (k\$)	Spending Score (1-100)
0	1	Male	19	15	39
1	2	Male	21	15	81
2	3	Female	20	16	6
3	4	Female	23	16	77
4	5	Female	31	17	40
...
195	196	Female	35	120	79
196	197	Female	45	126	28
197	198	Male	32	126	74
198	199	Male	32	137	18
199	200	Male	30	137	83

Summary Statistics

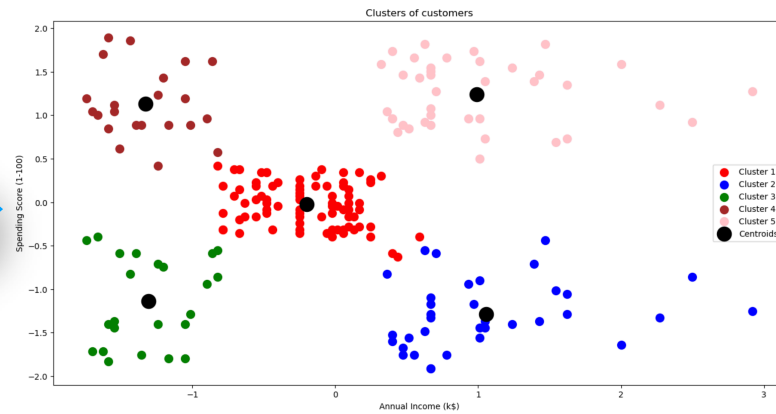
	CustomerID	Age	Annual Income (k\$)	Spending Score (1-100)
count	200.000000	200.000000	200.000000	200.000000
mean	100.500000	38.850000	60.560000	50.200000
std	57.879185	13.969007	26.264721	25.823522
min	1.000000	18.000000	15.000000	1.000000
25%	50.750000	28.750000	41.500000	34.750000
50%	100.500000	36.000000	61.500000	50.000000
75%	150.250000	49.000000	78.000000	73.000000
max	200.000000	70.000000	137.000000	99.000000
max	500.000000	10.000000	131.000000	88.000000
std	120.320000	18.000000	18.000000	13.000000
std	100.000000	30.000000	81.000000	80.000000

- The average Age of the customer is 38 with std of 13
- The average income of the customer is \$60k with std of \$15k
- The Average spending score is 50 with std of 25

Correlation of the features.



INCOME



Cluster 1 (red) - Customers have a medium income, and have the medium spending score, these customers, have a moderate income, so they spend moderately.

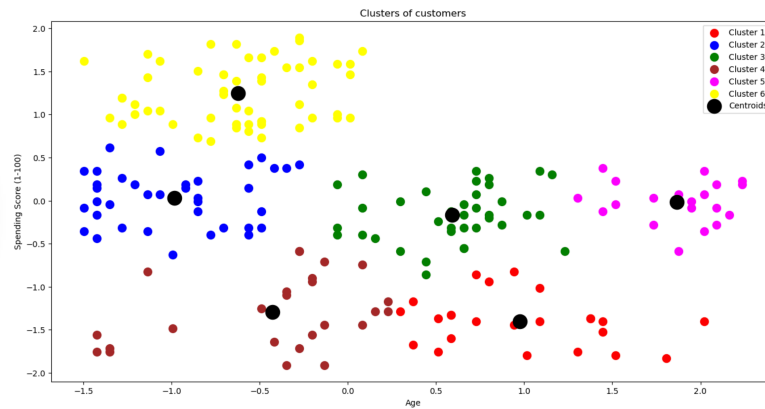
Cluster 2 (blue) - Customers have the High Income, but the spending score is low, these are customers have the money, but they not likely to spend the money.

Cluster 3 (green) - Customers have the low income, so they have the low spending score, these are the customers and just limit themselves by spending because of having low income.

Cluster 4 (brown) - Customers have the low income, but they have the high spending score, these are the customers who spend more than their regular income, by taking loans, and EMI's.

Cluster 5 (pink) - Customers having the High income, as well as the high spending score, these are the customers, who earn more as well as they spend more buying luxury products.

AGE



Cluster 1 (red) - Customers having the Age, but they are tend to spend less, these are customers who spend less

Cluster 2 (blue) - Customers having the Low Age and having the moderate spending score.

Cluster 3 (green) - Customers having the moderate Age, as well as the moderate spending score, these are the customers who spent on their neccessary needs, like ex. Marriage, house etc.

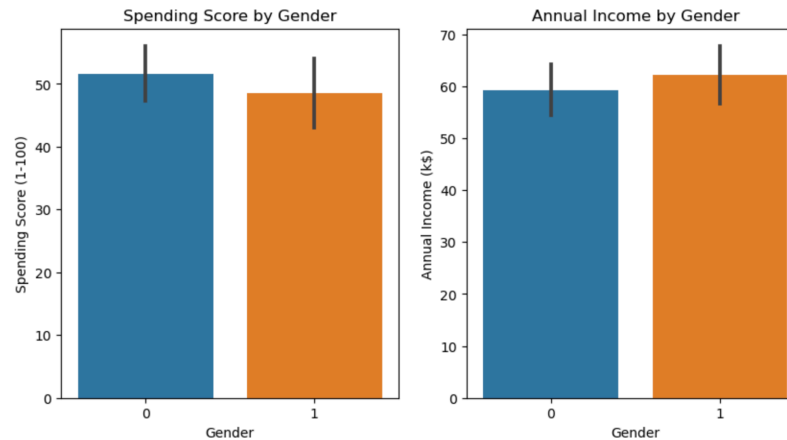
Cluster 4 (brown) - Customers having the low Age as well as the low spending score.

Cluster 5 (magenta) - Customers having the high Age, are tend to spend modularity, because they know, where to spend the money.

Cluster 6 (yellow) - Customers having the low age, but they spend score is high, these are customers, whose parents are rich, so their kids spend more.

By finding these clusters, we can get some of insights where to focus on and their behaviour on spending on age.

GENDER



The Male is 1 and Female is 0

WE can see that there is no huge difference in Gender.

- The spending score is little bit higher in the men, when compared with the women.
- The Annual income is little bit higher in the women, when compared with the men

Are there any noticeable trends in the spending behaviour of customers within each segment?

- When we look at the trends, we can say that the customers who are having the high income are spending more than anyone, because they are rich so they tend to buy the luxuries products.
- Customers who are having the low income also have the high spend score, which means that there are some customers whose income is low but their spending score is very high, they take loans, EMI's etc.
- Customers having the high and low (age & income) are having the low spending score, these are the customers, who didn't like spending and they are sensitive in terms of spending.

How does gender influence the customer segments and their spending behavior?

There is not much difference in terms of spending behaviour on both genders, but we can say,

- The spending score is little bit higher in the men, when compared with the women.
- The Annual income is little bit higher in the women, when compared with the men

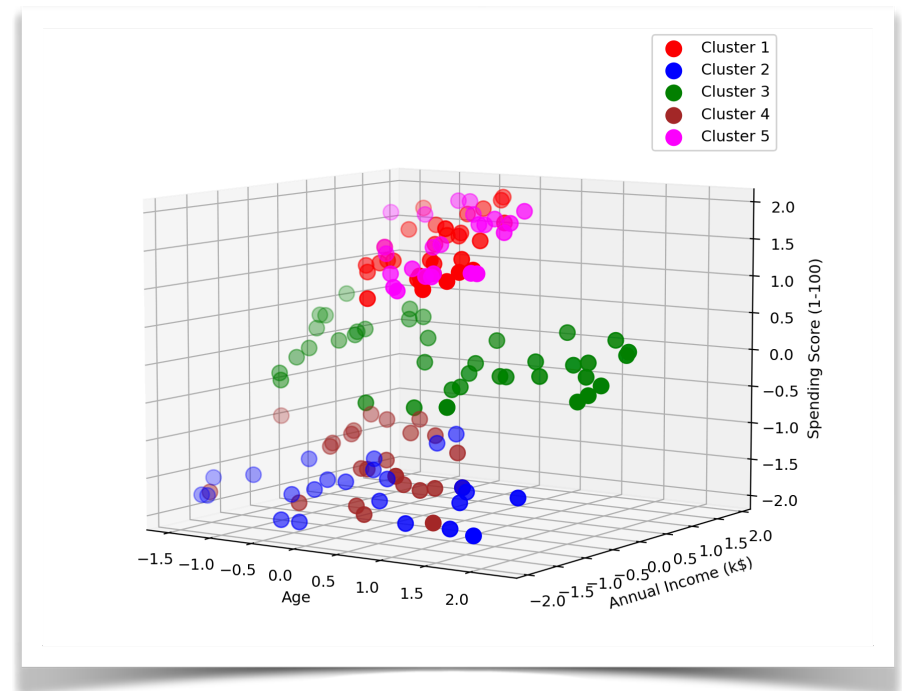
How do the identified customer segments differ from each other in terms of demographics and spending behavior?

Income Cluster - In the income cluster,

- we can see that there are some Customers(Cluster 4 (brown)), who are having low income, but their spending score is very high, shows that they tend to spend more than they earn, by taking loans, EMI's etc.
- Some of the customers(Cluster 5 (pink)) having the high income, as well as the high spending score, shows that the customers, who are rich they tend to spend more on the luxury things.
- Some of the customers(Cluster 1 (red)), who are having the moderate income and they are having moderate spending score, shows that they spend on their needs.
- Some of the customers(Cluster 2 (blue),Cluster 3 (green)), who are having the low spending score, these are customers, having the high income as well as the low income, so we dont focus much on these clusters.

Age cluster - In the age cluster,

- We can see some of the Customers(Cluster 6 (yellow)), having the low age, but the spending is high, means that their parents might be rich, so their kids will spend more.
- We can see some of the customers(Cluster 5 (magenta),Cluster 3 (green)), whos spending score is moderate, having the high age,as well as low age, these are people, who think about the future, and spend money on their needs.
- We can see some of the customers having the low spending score(Cluster 1 (red),Cluster 4 (brown)), means that the customers are not likely to spend the money, here we need not focus much on this group.



Recommendations

Based on my findings, these are the recommendations I can give for targeted Marketing strategies. There are total four type of Customers.

1. high income - high spending
2. low income - high spending
3. moderate income - moderate spending
4. high&low income - low spending.

high income - high spending - these are the customers who have high income and they tends to spend more on the luxury items, so the market should focus on the premium products.

low income - high spending - these are customers who are having low income, but they spend more, so the market give more offers like Loan options, EMI options, so that it can increase the sales.

moderate income - moderate spending - These are people who have moderate income and they spend moderately, these are people who buy the essential needs, so the market can focus on the essentials that everyone should need, and giving discounts can increase the sales.

high&low income - low spending - these are people who are having the high income, as well the low income, but they spend very low, so the market should find out what are problems that they are facing, and come out with strategies and giving exclusive discounts and promotions can increase the sales.

Having high Income, are tends to spend more than low income

Having the Low Age, are tends to spend more than the High Age

Having low or high income, there are some customers, who tends to spend more.

Having moderate income and age, tends to spend moderately.



