CUSTOMER LIFETIME VALUES AND RFM ANALYSIS

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Dataset Overview

This dataset is transaction data set of two years. Consist of 540k records and 9 variable. The variables are Price, Customer ID, Stock Code, Country, Invoice, Invoice Data, Quantity, and Description.

Our goals here are finding CLV each customer, segement customer by RFM and CLV values, and making recommendation

Customer Lifetime Value Defined

The present value of the expected sum of discounted cash flows of an individual customer. Or simply we can say, **it’s the total purchases made (cash flow) over the lifetime of that customer.**

We will use CLV to predict how much the customer will spend in future

Benefits Knowing our CLV

Valueable Customers

Determine the traits of our most valuable customers and find similar customers

How Much Spending

Know how much we should be spending to acquire a particular type of customer

Push Marketing Channel

Push the marketing channels that bring you our most valuable customers

Market Research

Use our best customers for market research and product feedback

CLV Result

*Glimpse of Customer Lifetime Values List by ID

Customer ID	CLV
12348	$ 179.15
12349	$ 235.97
12350	$ 54.12
12352	$ 421.09

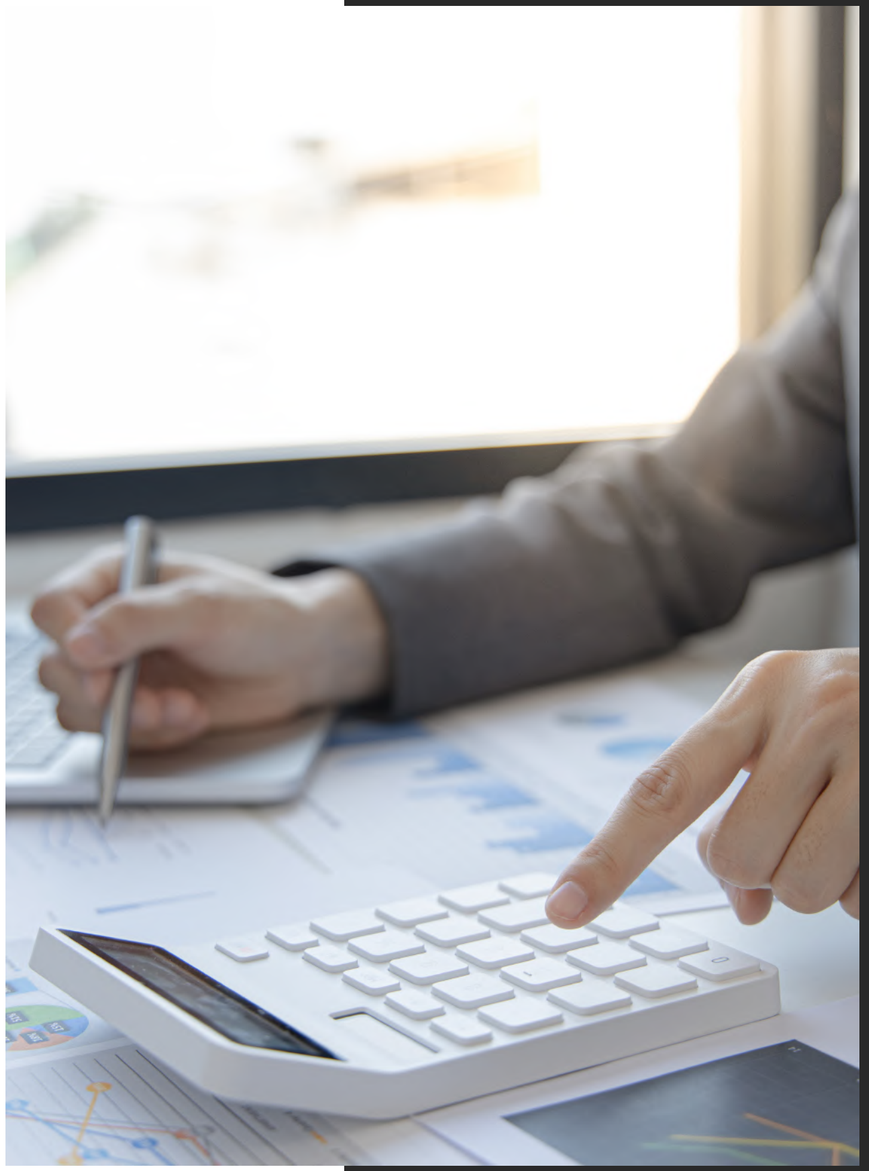
*Parameter time = 2 (two months)

The model predict in the next 2 months, these customers will make a purchase in CLV dollar monetary unit.

RFM Clustering

Now we cluster our customers using RFM + Tenure and CLV method. Tenure represents the age of the customer in whatever time units chosen (weekly, in the above dataset).

According to Elbow Method, the best cluster number in this case is 3 cluster, so we decided to cluster our customers into 3 groups



Recency

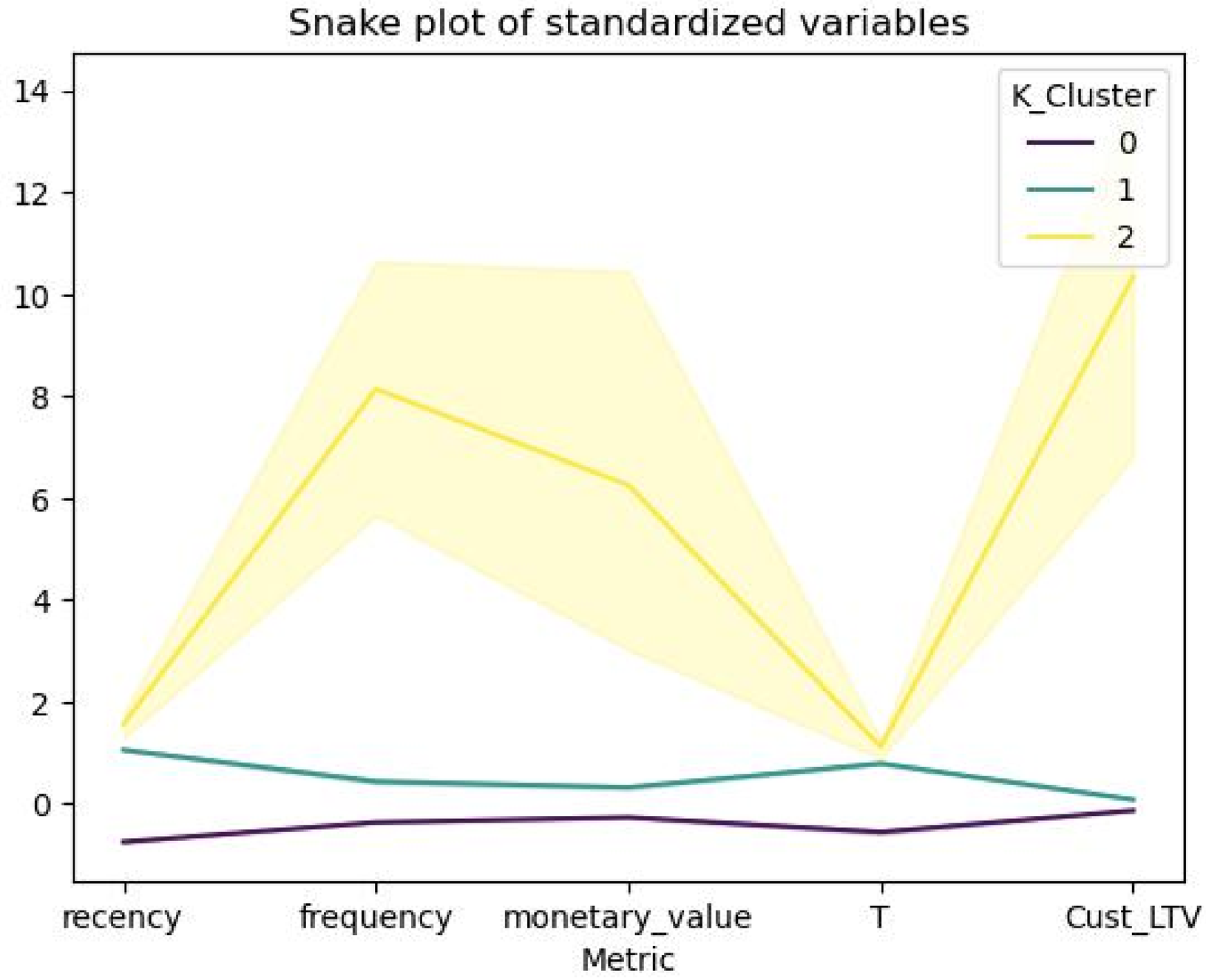
frequency represents the number of repeat purchases the customer has made

Frequency

recency represents the age of the customer when they made their most recent purchases.

Monetary

monetary value represents the average value of a given customer’s purchases



Summary

Cluster 0

This cluster is low spender group but they bought most recent. We can say that mostly this group consist of new customer/first time buyer

Cluster 1

Cluster 1 represent mid-spender customers. They are existing customer who bought less frequent

Cluster 2

Cluster 2 is the best customers. They are most frequent and high spender buyer. Those are existing buyer and predicted will buy higher value in the next 2 months

Recommendation

Cluster 0

In this cluster, mostly consist of first time buyer, in order to keep them 'alive', we can offer them discount/cashback. So, at least they will back again in certain time to buy our product. Indeed, this is need certain amount of investment, but keeping this cluster 0 is better rather than convert the new customer

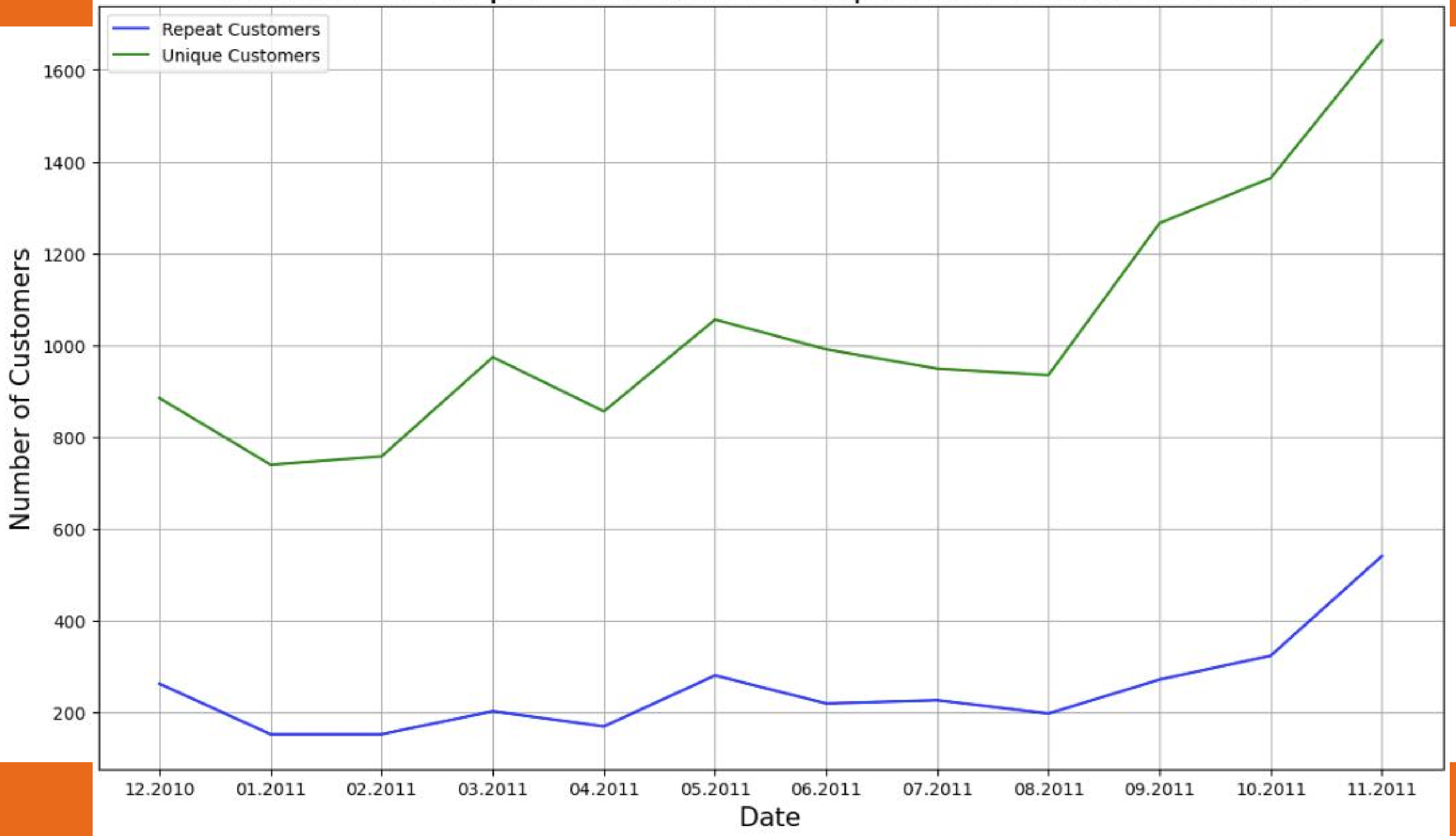
Cluster 1

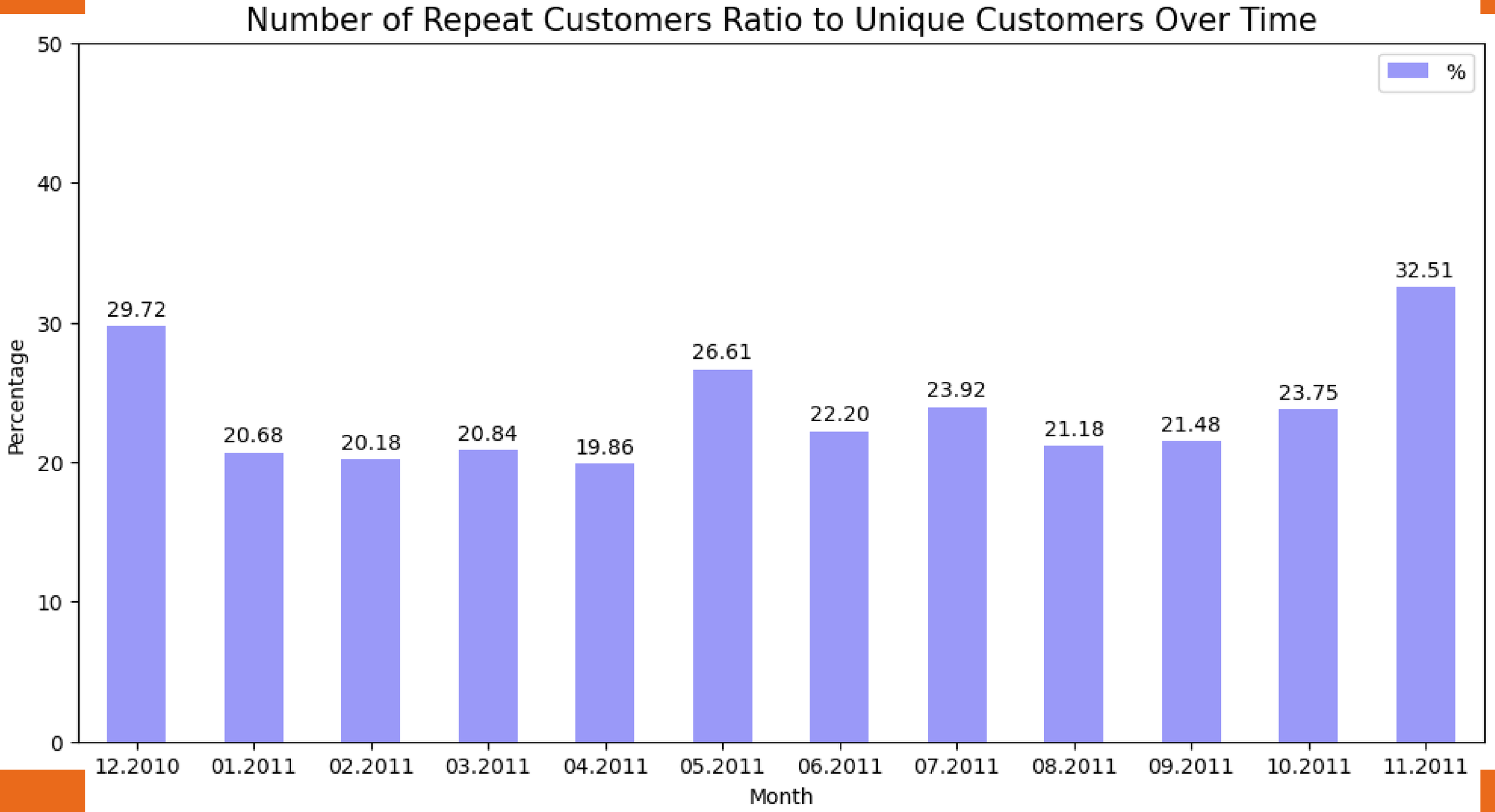
Similar method to cluster 0, we will offer them discount treatment to make these customers back to our company. Our focus is to increase buying frequency on cluster 0 and cluster 1. But in cluster 1 , since they are not first time buyer, budget to toffer them discount promotion is slightly cheaper than budget to treat cluster 0

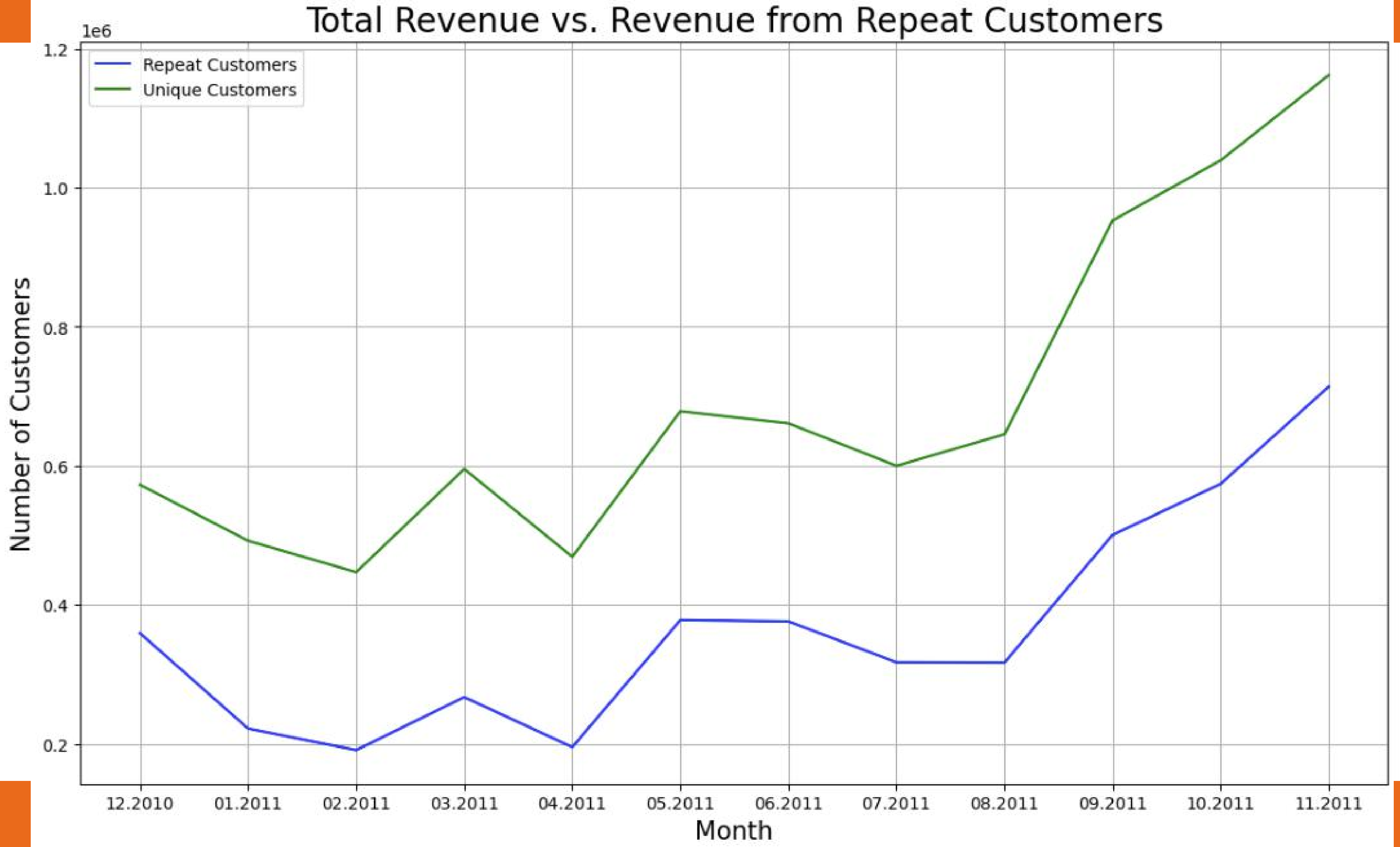
Cluster 2

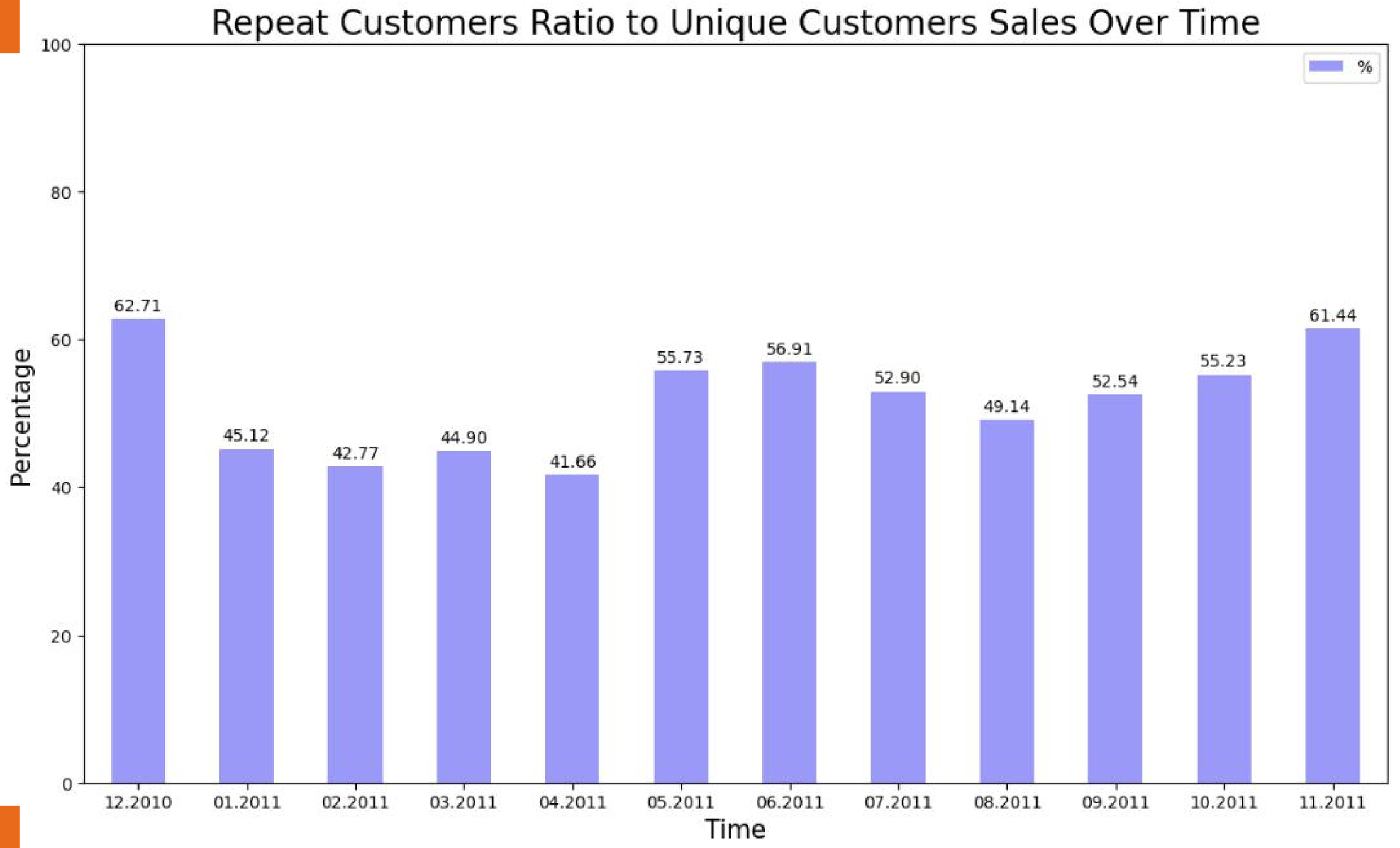
Since this cluster consist of the best customers, we can focus to make them loyal. One of most used method is using loyalty program. We can increase their spending to buy our product trough loyalty program we created.

Business Insights


Number of Unique Customers vs. Repeat Customers Over Time
Repeat Customers
Unique Customers
Number of Customers
1600
1400
1200
1000
800
600
400
200
12.2010
01.2011
02.2011
03.2011
04.2011
05.2011
06.2011
07.2011
08.2011
09.2011
10.2011
11.2011
Date


Number of Repeat Customers Ratio to Unique Customers Over Time
%
Percentage
Month
0
10
20
30
40
50
29.72
20.68
20.18
20.84
19.86
26.61
22.20
23.92
21.18
21.48
23.75
32.51
12.2010
01.2011
02.2011
03.2011
04.2011
05.2011
06.2011
07.2011
08.2011
09.2011
10.2011
11.2011


Total Revenue vs. Revenue from Repeat Customers
1e6
1.2
1.0
0.8
0.6
0.4
0.2
Repeat Customers
Unique Customers
Number of Customers
12.2010
01.2011
02.2011
03.2011
04.2011
05.2011
06.2011
07.2011
08.2011
09.2011
10.2011
11.2011
Month


Repeat Customers Ratio to Unique Customers Sales Over Time
%
Percentage
Time
100
80
60
40
20
0
62.71
45.12
42.77
44.90
41.66
55.73
56.91
52.90
49.14
52.54
55.23
61.44
12.2010
01.2011
02.2011
03.2011
04.2011
05.2011
06.2011
07.2011
08.2011
09.2011
10.2011
11.2011

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THANK YOU

Can reach the target in a short time