

ABC - Technical Presentation

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A sharp decline in the no of customers for ABC Retail store from Dec 2010 to Dec 2011, emphasizes the need to target key customers to increase its sales over this period

We see a sharp decline in the no of customers in a year resulting in loss of sales for ABC

Though ABC sells across 37 countries, its sales have started to decline in all resulting in loss of customers

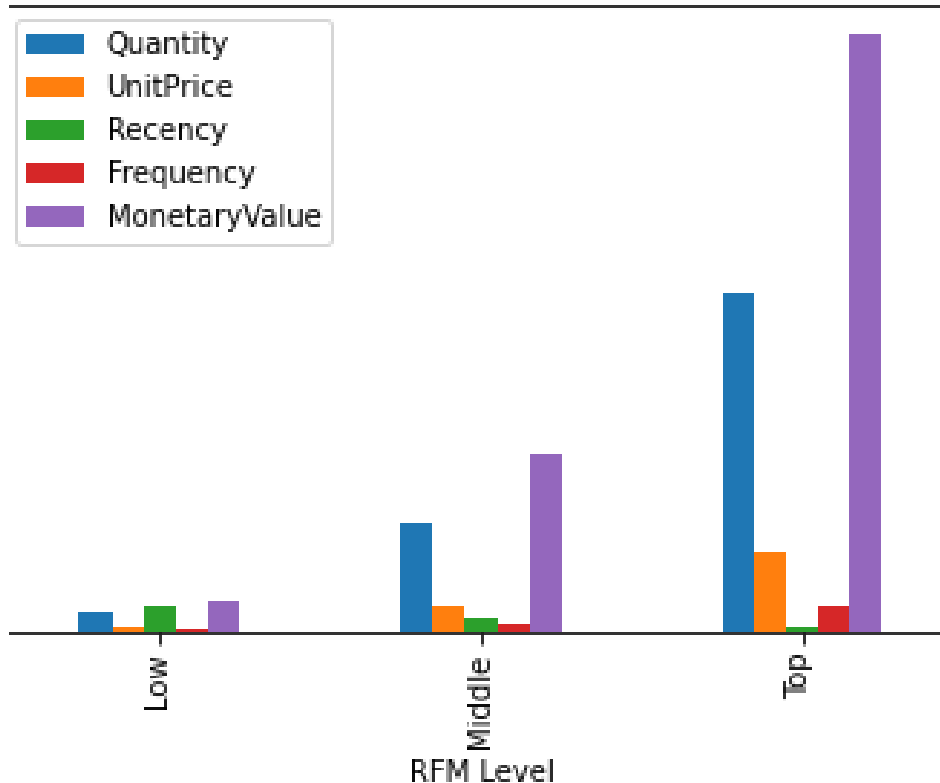
ABC sells 3877 products but the top 10 products account for only 10% of total sales.

We need to encourage customers to engage in cross selling to buy more variety of products which will increase customers stickiness.

Seasonality in the purchase pattern of the products has been observed

Customers are buying maximum in the last quarter owing to seasonal products offered by ABC. Customers might hibernate if we do not encourage them to buy the non-seasonal products alongside.

Customers were segmented into three clusters on the basis of their recency frequency and monetary value.



Key Insights

Low segment customers are contributing to only 4% of total sales but account for 30% of total customers.

Middle segment customers are contributing to 22% of the total sales and account for 41% of the total customers.

Top segment customers are the best customers of ABC. They are the loyal customers.

Different set of customers have to be targeted with different objectives and hence different marketing campaigns.

Descriptive and Statistical Approach were taken to find out the key factors determining customer segmentation

What opportunities exist for ABC, an online retail store to target its customers efficiently in the coming year

Descriptive Statistics

Inferential Statistics

Data Preparation

Step 1: Missing Value treatment

Step 2: Data Cleaning

Step 3: Final Variables

- 25% of the customers IDs are missing .
- Quantity had negative values.
- Unit price had negative values
- Out of 37 countries to which ABC sells, UK is the top buyer accounting for 85% of the sales.

Inferential Statistics – RFM Analysis

	Recency	Frequency	Monetary Value	
	mean	mean	mean	count
RFM_Score				
3.0	288.4	8.0	157.2	369
4.0	199.1	14.2	231.7	372
5.0	169.5	21.4	361.8	533
6.0	118.6	28.5	652.9	490
7.0	97.8	39.6	1246.5	423
8.0	70.2	55.2	1044.6	460
9.0	59.1	79.8	1480.6	422
10.0	41.8	123.0	1987.1	439
11.0	26.7	189.4	4592.1	429
12.0	11.2	382.1	9425.3	401

	Recency	Frequency	Monetary Value	
	mean	mean	mean	count
RFM Level				
Low	212.6	15.4	264.6	1274
Middle	87.3	50.0	1087.7	1795
Top	27.0	227.3	5218.2	1269

Key Insights

- Almost equal distribution of customers in the three segments.
- Clear distinction in the three groups in terms of RFM
- However, we still need to confirm the clustering through k-means clustering.

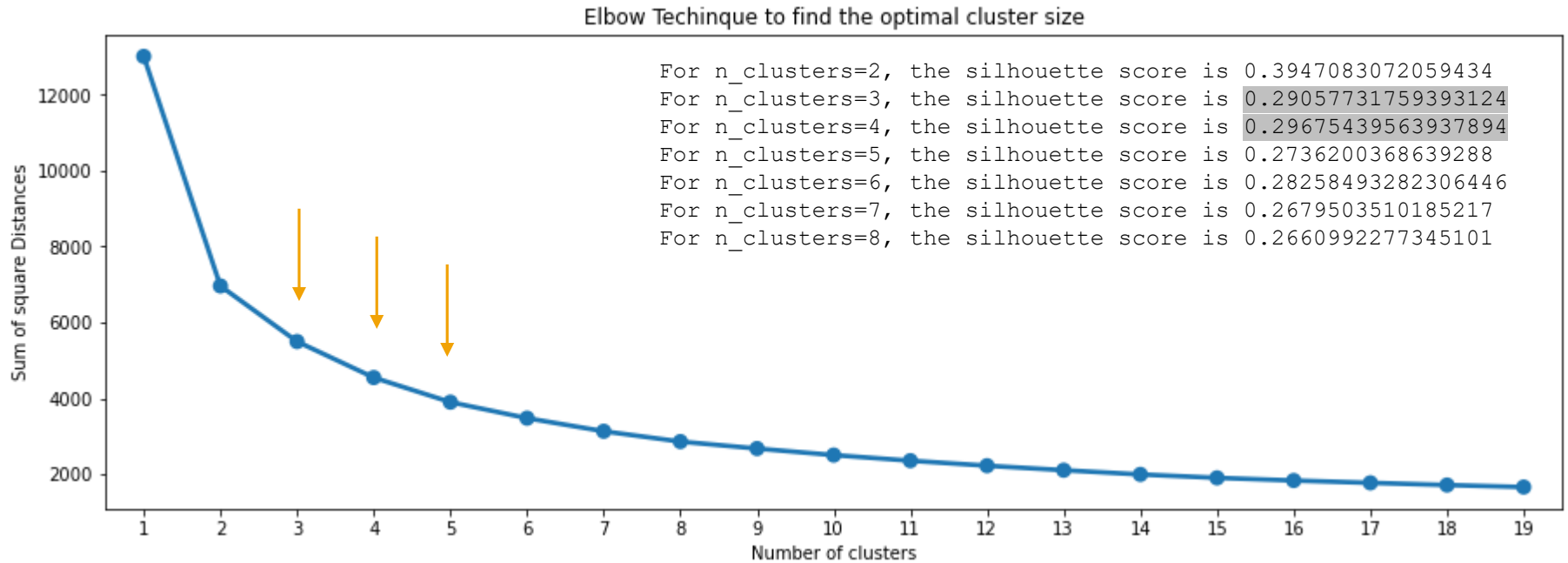
Inferential Statistics – RFM Analysis

	RFM Score	Recency	Frequency	Monetary Value	Count	Count %
		Mean	Mean	Mean		
RFM Level						
Low	3-5	212.6	15.4	264.6	1274	29.36%
Middle	6-9	87.3	50.0	1087.7	1795	41.37%
Top	10-12	27.0	227.3	5218.2	1269	29.25%

Key Insights

- Almost equal distribution of customers in the three segments.
- Clear distinction in the three groups in terms of RFM
- We also have a second approach to segmentation i.e. k-means clustering.

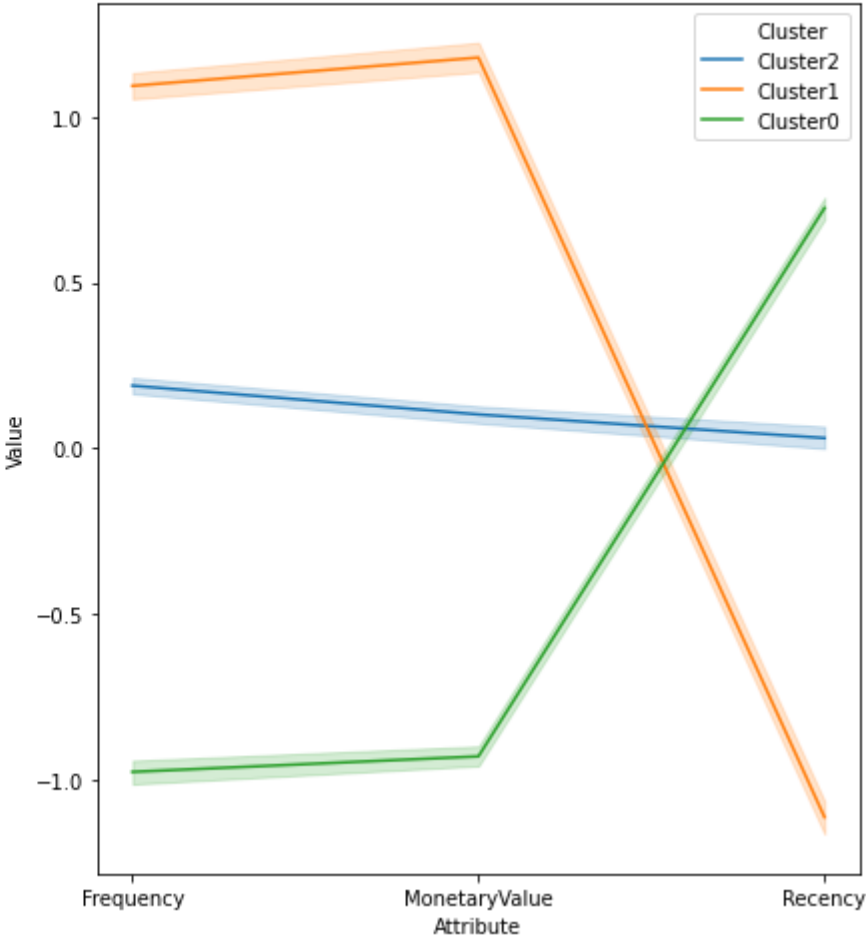
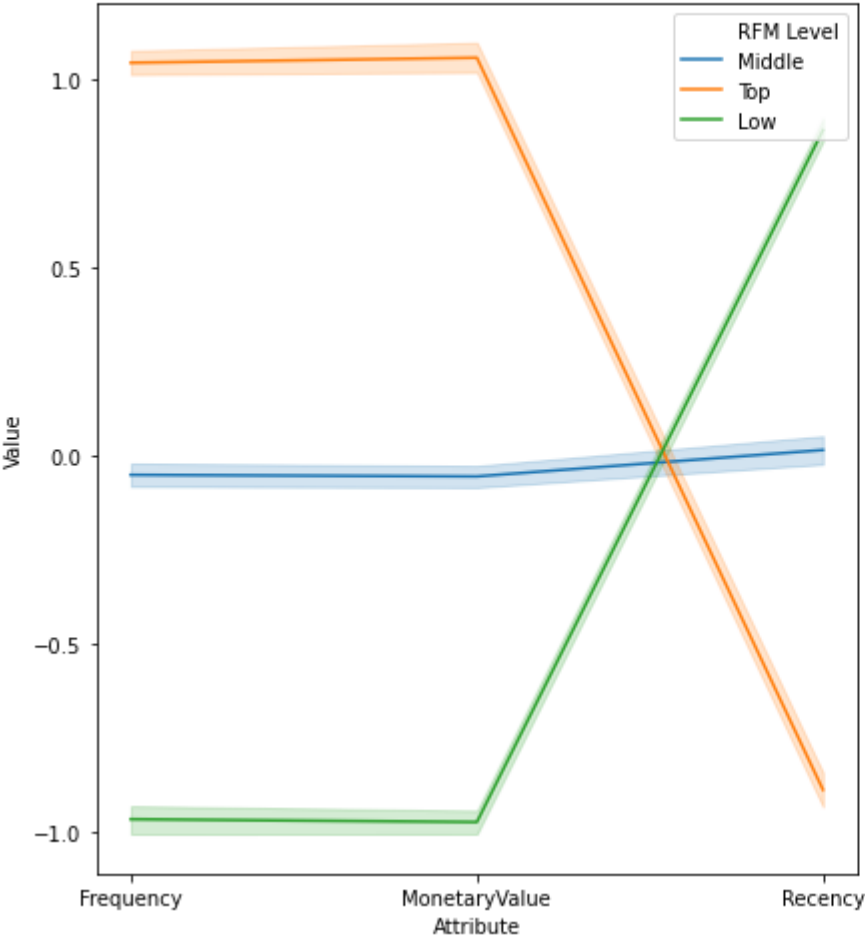
Inferential statistics- k means clustering, Elbow and Silhouette analysis



- Clusters have been created based on the values of Recency, Frequency and Monetary with the help of K-Means Clustering.
- Elbow technique shows any of 3, 4 or 5 can be optimal cluster size.
- From silhouette analysis, we can see that both 3 and 4 no of clusters prove to be optimal size.
- Further analysis, for 4 clusters represented unclear distinction of customers in the 4 clusters.

Inferential Statistics – Plotting of clusters through Snake Plot method

Snake Plot of RFM



Recommendations

TOP Segment	Frequency	Recency	Monetary Value	MIDDLE Segment	Frequency	Recency	Monetary Value
Mean	227.29	27.03	5218.17	Mean	50.01	87.30	1087.74
min	20.00	1.00	360.93	min	1.00	1.00	35.40
25%	99.00	11.00	1546.91	25%	25.00	27.50	411.65
50%	144.00	19.00	2479.16	50%	40.00	62.00	673.26
75%	252.00	32.00	4199.85	75%	64.00	121.50	1078.35
max	7847.00	161.00	280206.00	max	378.00	698.00	168472.50

LOW Segment	Frequency	Recency	Monetary Value
Mean	15.43	212.60	264.55
min	1.00	24.00	3.75
25%	7.00	114.00	141.52
50%	12.00	202.50	221.23
75%	21.00	279.00	332.55
max	96.00	698.00	1542.08

Middle Segment

- **Promotional campaigns**
- **Upselling and cross selling of products**
- **Repeat products on discount**

Low Segment

- **Increase user engagement.**
- **Personalized emails.**
- **Discount coupons**

Top Segment

- **New Product Launch.**