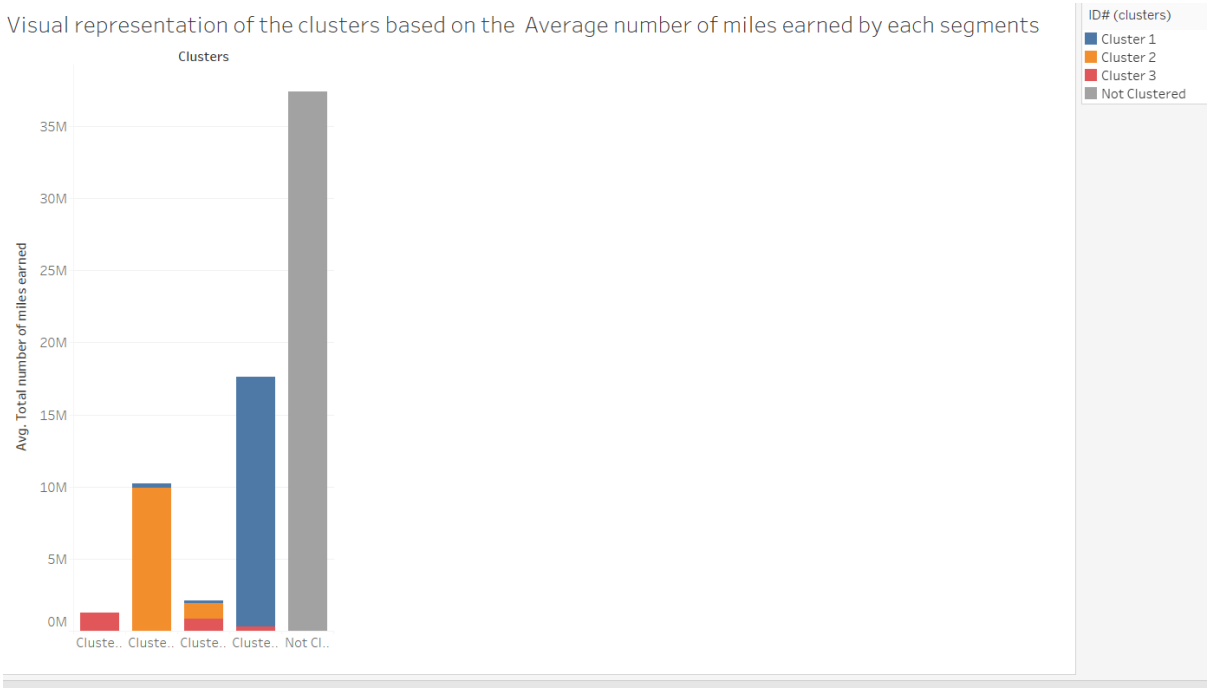
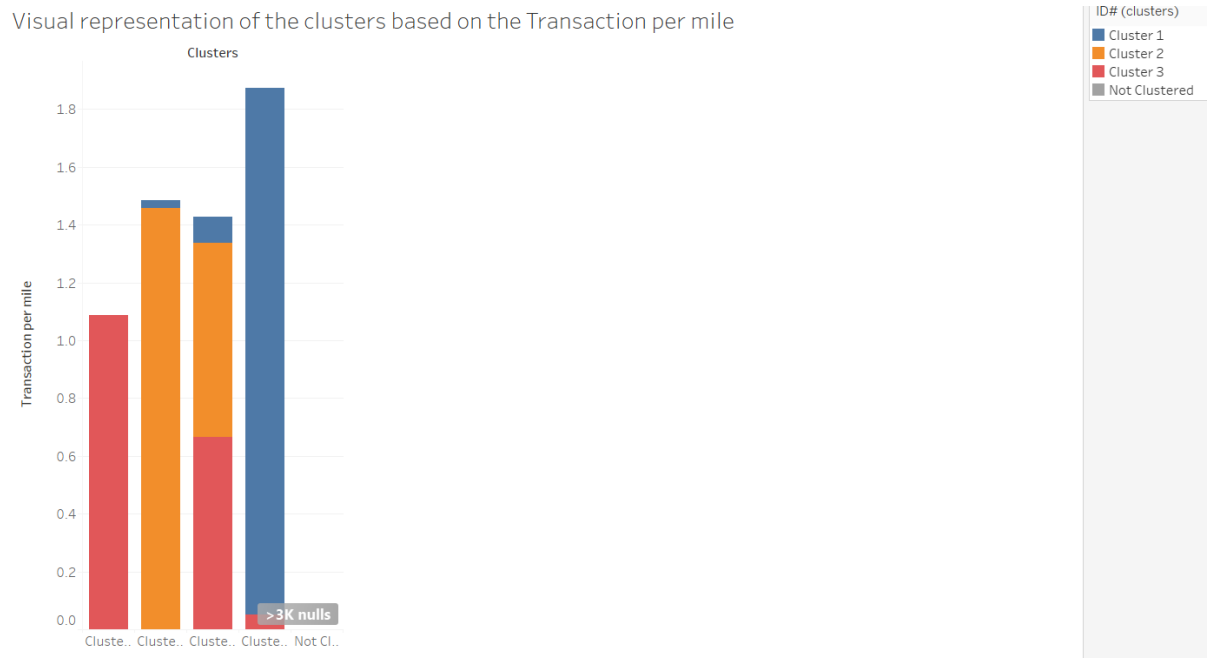
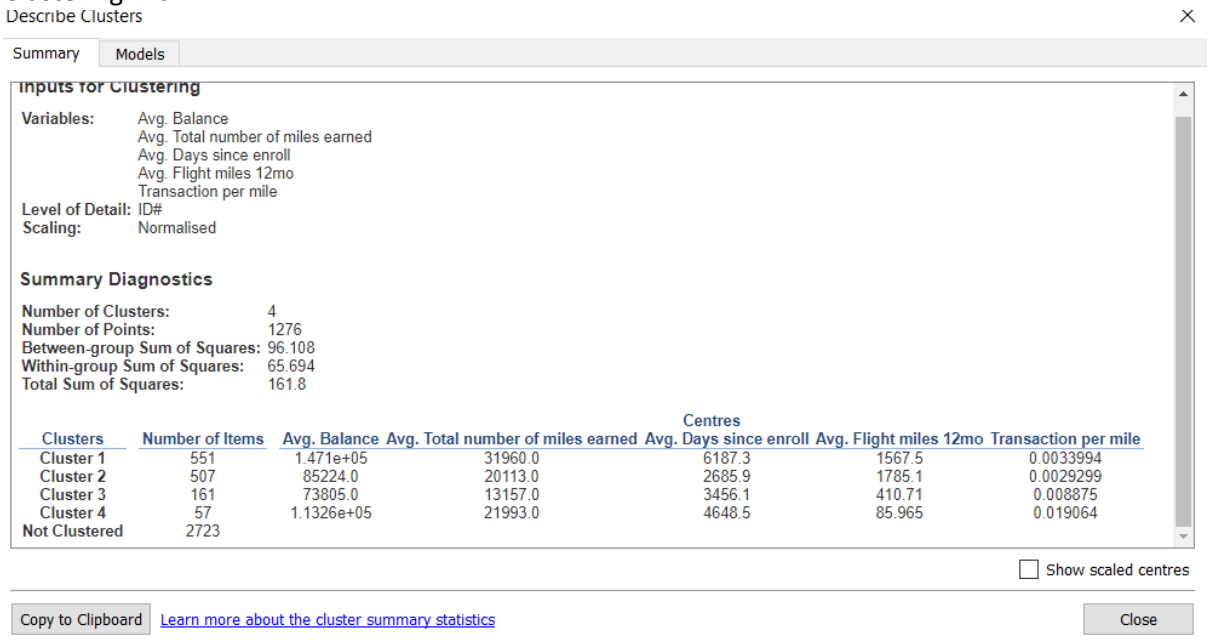


Visual representation of the clusters based on the Average number of miles earned by each segment.



Visual representation of the clusters based on the Transaction per miles by each segment.

1. Clustering with K =4


Describe Clusters

Summary | Models

Inputs for Clustering

Variables: Avg. Balance
Avg. Total number of miles earned
Avg. Days since enroll
Avg. Flight miles 12mo
Transaction per mile
Level of Detail: ID#
Scaling: Normalised

Summary Diagnostics

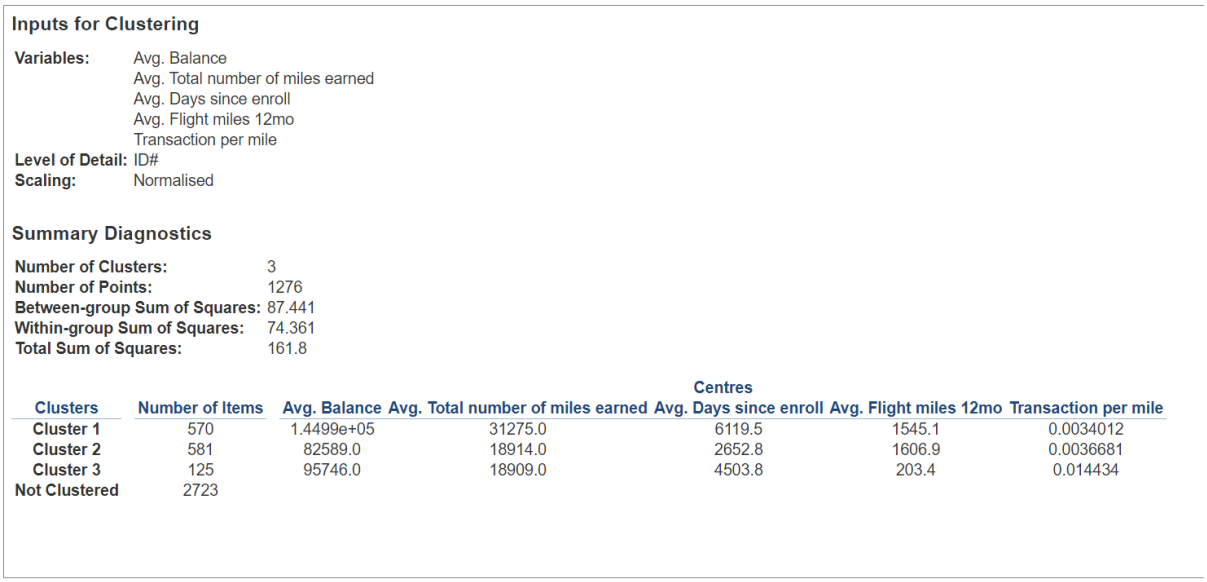
Number of Clusters: 4
Number of Points: 1276
Between-group Sum of Squares: 96.108
Within-group Sum of Squares: 65.694
Total Sum of Squares: 161.8

		Centres				
Clusters	Number of Items	Avg. Balance	Avg. Total number of miles earned	Avg. Days since enroll	Avg. Flight miles 12mo	Transaction per mile
Cluster 1	551	1.471e+05	31960.0	6187.3	1567.5	0.0033994
Cluster 2	507	85224.0	20113.0	2685.9	1785.1	0.0029299
Cluster 3	161	73805.0	13157.0	3456.1	410.71	0.008875
Cluster 4	57	1.1326e+05	21993.0	4648.5	85.965	0.019064
Not Clustered	2723					

Show scaled centres

Copy to Clipboard | Learn more about the cluster summary statistics | Close

2. Clustering with K =3


Inputs for Clustering

Variables: Avg. Balance
Avg. Total number of miles earned
Avg. Days since enroll
Avg. Flight miles 12mo
Transaction per mile
Level of Detail: ID#
Scaling: Normalised

Summary Diagnostics

Number of Clusters: 3
Number of Points: 1276
Between-group Sum of Squares: 87.441
Within-group Sum of Squares: 74.361
Total Sum of Squares: 161.8

		Centres				
Clusters	Number of Items	Avg. Balance	Avg. Total number of miles earned	Avg. Days since enroll	Avg. Flight miles 12mo	Transaction per mile
Cluster 1	570	1.4499e+05	31275.0	6119.5	1545.1	0.0034012
Cluster 2	581	82589.0	18914.0	2652.8	1606.9	0.0036681
Cluster 3	125	95746.0	18909.0	4503.8	203.4	0.014434
Not Clustered	2723					

From the two clusters above we can see that the clustering with K=4 has a stronger differentiation.

Interpretation of the Segments

I. Cluster 1(Tier 1 Passengers): This cluster shows our Passengers with the highest retention. They have the highest average balance of 147000, highest total number of miles earns (indicating retention), highest days since enroll (which shows they have been around for a long time) and a low transaction per mile(feature engineering- indicating constant travel)

II. Cluster 4(Tier 2 Passengers): They come next after the Tier one customers in terms of patronage because of their high average balance and high number of miles earned. They

also have the lowest number of flight miles in the last 12 hours which indicate short distance travel

III. Cluster 2(Tier 3 Passengers): consisting of 507 passengers, these are the next clusters of passengers when it comes to retention. Once good characteristic of this set of passengers is that the have a higher number of flight miles in the last 12 months, which means they travel a longer distance compared to other passengers

IV. Cluster 3(Tier 4 Passengers): These passengers have a low number of flight miles in the last 12 months and a low metric value when compared to other Clusters.

Business Decision

Cluster 1 and 2 should be targeted for offers

- Cluster 1: This are my Tier 1 passengers with high miles earned and days since enrolled. They should have a top tier bonus with more discounts to improve retention.
- Cluster 2: These passengers have the highest number of flight mile in the last 12 month, indicating a longer distance travel. Offers like discount on long distance travel should be more appealing to them.