

# Our results: Grouping customers by responsiveness to telemarketing offer

Below is the summary of our cluster model.

**How many clusters do you think best fits these data?**

**What are the major characteristics of each cluster?**

**What are the major differences between the clusters?**

Looking at the cluster results, we think three are appropriate, based on qualitative assessment of the cluster centroids. In the k=3 scheme the clusters are readily distinguishable as: blue collar workers, white collar workers with a positive economic outlook, and white collar workers with a negative economic outlook.

```
> summary(cluster_model)
Model Details:
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H2OClusteringModel: kmeans
Model Key: KMeans_model_R_1458001221395_7
Model Summary:
  number_of_rows number_of_clusters number_of_categorical_columns number_of_iterations
within_cluster_sum_of_squares
1          41188                3                11                11
391713.69464
  total_sum_of_squares between_cluster_sum_of_squares
1          641978.00000                250264.30536

H2OClusteringMetrics: kmeans
** Reported on training data. **

Total Within SS: 391713.7
Between SS: 250264.3
Total SS: 641978
Centroid Statistics:
  centroid      size within_cluster_sum_of_squares
1         1 14199.00000          105596.99140
2         2 13534.00000          199111.81221
3         3 13455.00000           87004.89102

Scoring History:
  timestamp      duration iteration avg_change_of_std_centroids
within_cluster_sum_of_squares
1 2016-03-15 14:09:30 0.127 sec          0          554653.61191
2 2016-03-15 14:09:30 0.199 sec          1          6.54885          403066.35411
3 2016-03-15 14:09:30 0.217 sec          2          1.39999          393332.08710
4 2016-03-15 14:09:30 0.234 sec          3          0.02795          391934.01380
5 2016-03-15 14:09:30 0.249 sec          4          0.00271          391772.68517
6 2016-03-15 14:09:30 0.267 sec          5          0.00075          391728.94779
7 2016-03-15 14:09:30 0.282 sec          6          0.00021          391717.56624
8 2016-03-15 14:09:30 0.299 sec          7          0.00003          391715.84451
9 2016-03-15 14:09:30 0.314 sec          8          0.00001          391715.38636
10 2016-03-15 14:09:30 0.329 sec          9          0.00001          391714.64384
11 2016-03-15 14:09:30 0.346 sec         10          0.00002          391713.69464
```