CUSTOMER SEGMENTATION ANALYSIS

CLUSTERING MODELS

Machine Learning

WHO ARE OUR CUSTOMERS?

Objective:

Segment customers to better understand their characteristics and behaviors.

HOW TO SOLVE THE PROBLEM

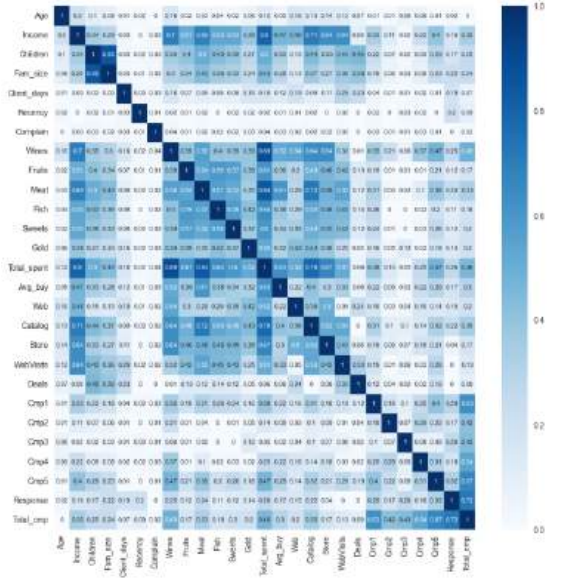
We apply clustering techniques to uncover hidden patterns

Dataset

Demographics, consumption, promotions

	Age	Education	Income	Status	Children	Fam_size	Client_days	Recency	Complain
0	68	Graduate	58138.0	Single	0	1	663	58	0
1	71	Graduate	46344.0	Single	2	3	113	38	0
2	60	Graduate	71613.0	Couple	0	2	312	26	0

	Wines	Fruits	Meat	Fish	Sweets	Gold	Total_spent	Avg_buy
0	635	88	546	172	88	88	1617	73.50
1	11	1	6	2	1	6	27	6.75
2	426	49	127	111	21	42	776	38.80

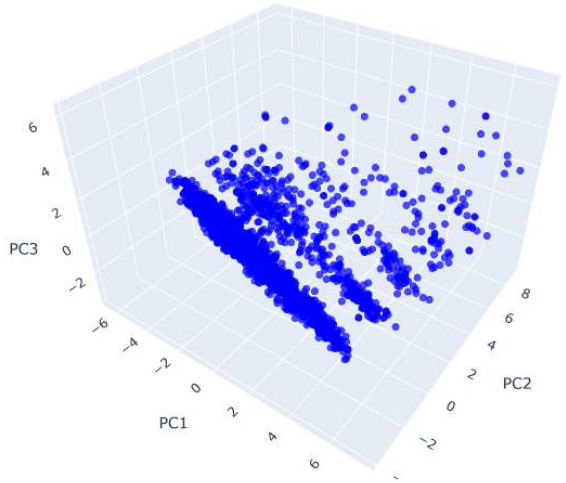


Data cleaning, miniEDa and preprocessing

Outliers and missing values, new columns, analysis of distributions and scaling of all features.

Dimensionality Reduction

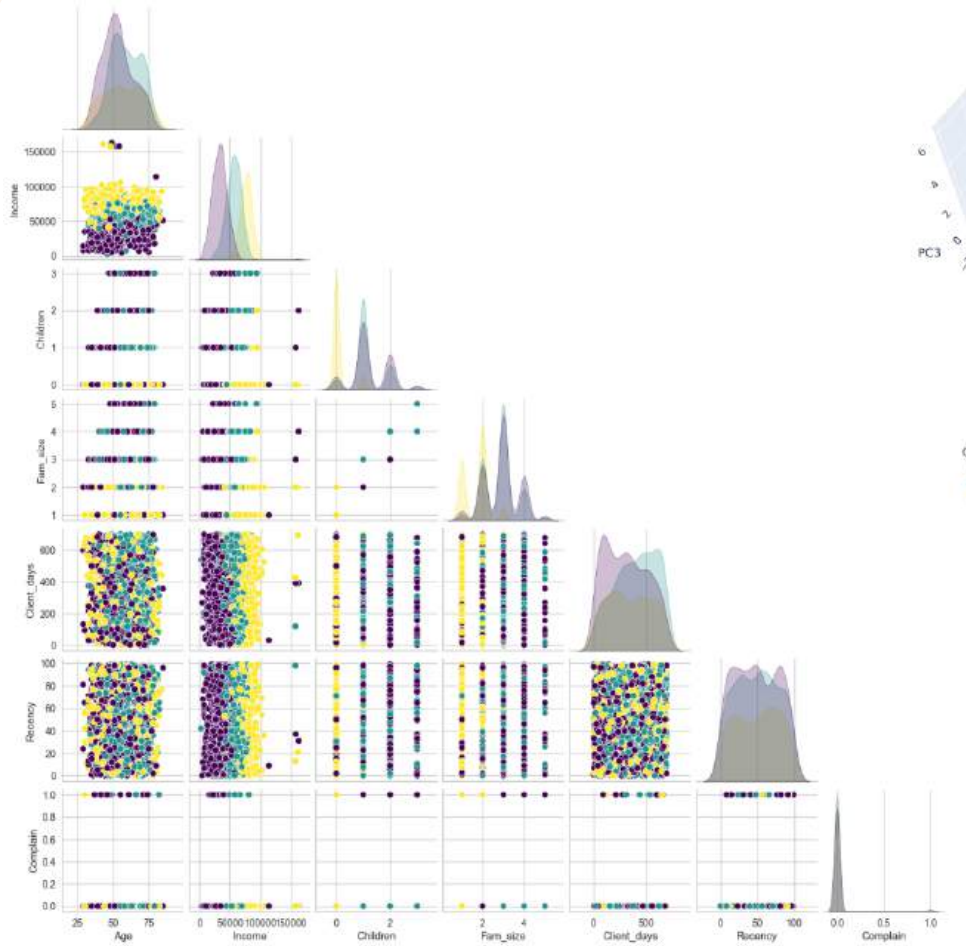
Application of PCA to reduce dimensions

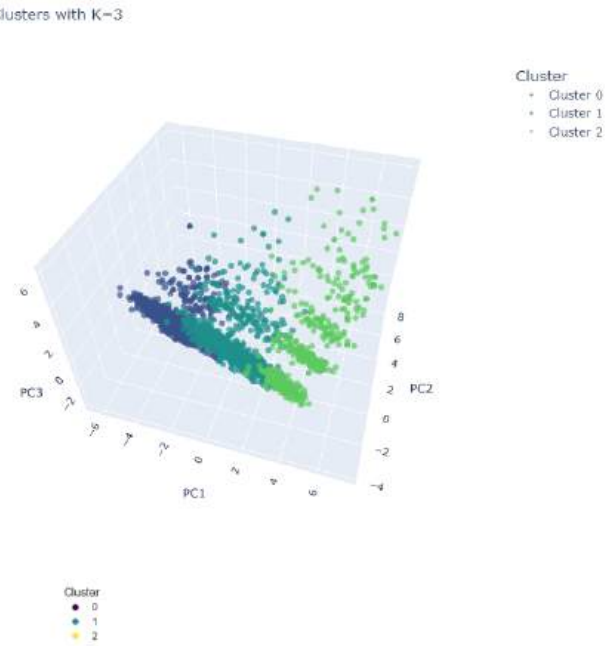


KMEANS, DBSCAN, AGGLOMERATIVE

CLUSTERING MODELS

Model	K	Silhouette Score
KMeans	3	0.203
KMeans	4	0.196
AgglomerativeClustering	3	0.170
AgglomerativeClustering	4	0.156
DBSCAN	3	0.085
DBSCAN	4	0.140
DBSCAN	5	0.096

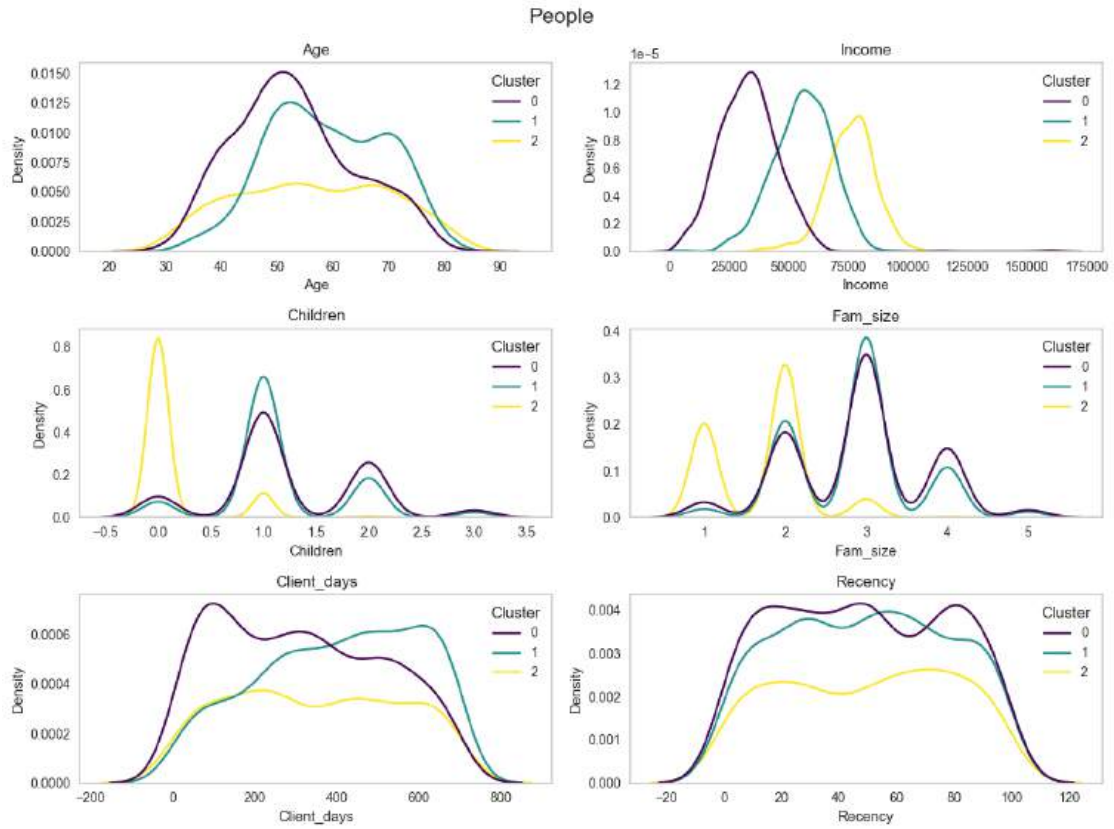




PROFILES

Customer segmentation

KMEANS K=3



Cluster 0 *Digital curious*	**Cluster 1** *Deal hunters*	**Cluster 2** *Exclusive Elite*
Low spending	Moderate spending	High spending
Lower income	Medium income	Higher income
Larger family	Medium family	Small family
Middle aged (40-60)	Old aged (50-75)	Any age (35-75)
New client	Old client	Long-term client
Many visits to the website, but not to buy	Web shopping preference	Catalog and store purchase preference
Doesn't respond to Marketing	Slight response to Marketing	Good response to marketing
Slight interest in deals	High interest in deals	Low interest in deals

NEXT STEPS

¿and now?

1. Create functional model to segment new customers
2. Combine with supervised models
3. Validate clusters with real results
4. Integrate temporal data

A BRIGHT FUTURE

KNOWING THE CUSTOMER IS THE FIRST STEP IN BUILDING CUSTOMER LOYALTY

THANK YOU FOR YOUR ATTENTION

Carlos Noya Torrecillas

BootCamp Data Science – The Bridge